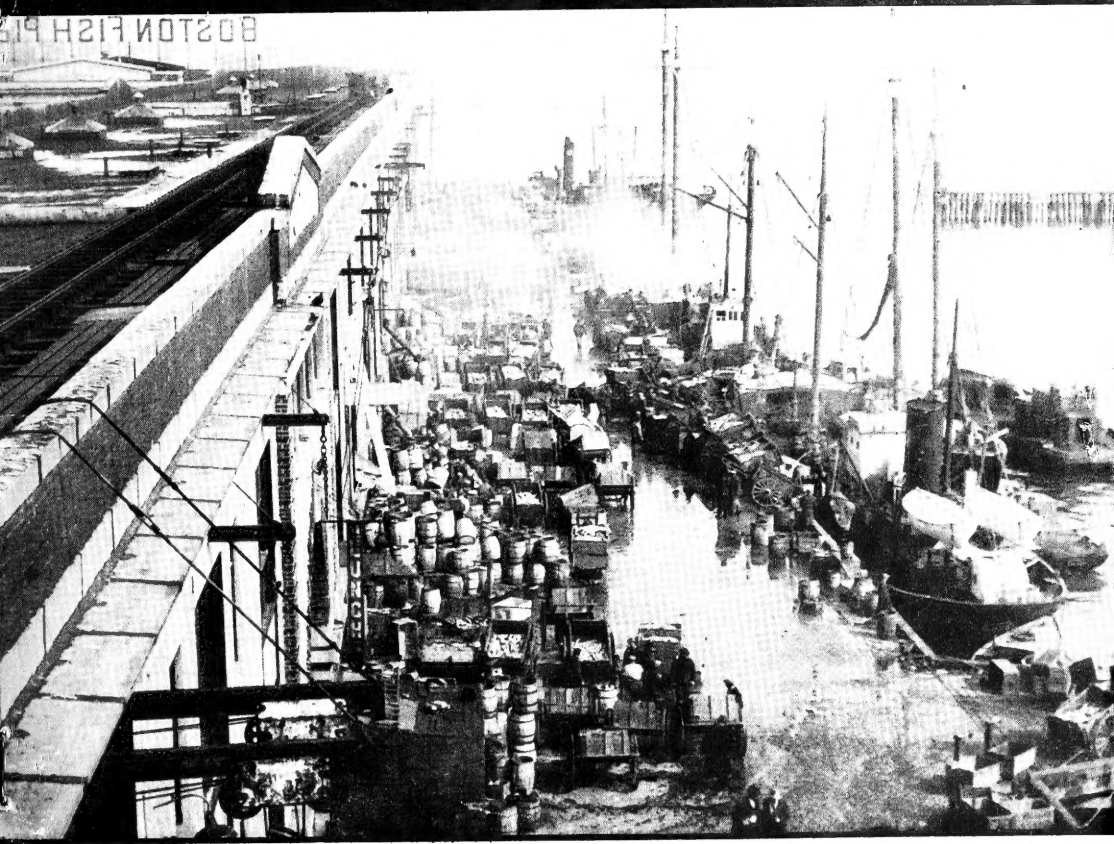
COMMERCIAL FISHERIES REVIEW



Vol. 11, No. 12 DECEMBER 1949

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United States Department of the Interior
Washington, D.C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, Secretary

FISH AND WILDLIFE SERVICE
ALBERT M. DAY, Director

COMMERCIAL FISHERIES REVIEW

A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES
PREPARED IN THE BRANCH OF COMMERCIAL FISHERIES

A. W. Anderson, Editor
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Applications for COMMERCIAL FISHERIES REVIEW, which is mailed free to members of the fishery industries and allied interests, should be addressed to the Director, Fish and Wildlife Service, United States Department of the Interior, Washington, 25, D.C.

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COMMERCIAL FISHERIES REVIEW

December 1949 Washington 25, D.C. Vol. 11, No. 12

IDENTIFICATION OF THE COMMERCIAL COMMON SHRIMP SPECIES

By Carter Broad*

INTRODUCTION

Only four out of the numerous species of shrimp found along the South Atlantic and Gulf coasts are of commercial importance. These are:

The common shrimp (Penaeus setiferus);
The grooved shrimp (Penaeus aztecus, and Penaeus duorarum);
The sea-bob (Xiphopenaeus kroyeri).

Since the fishermen do not distinguish between the species of grooved shrimp, all of these usually have been included under the single species (P. brasiliensis) and to the industry they are known as "brasilian" shrimp or "brownies."

Outstandingly the most important commercial species, the common or white shrimp (P. setiferus) is estimated to make up 85 to 90 percent of the total shrimp catch. However, in 1948, commercial fishermen in Texas reported that the majority of the catch at certain times of the season consisted of grooved shrimp. It has recently been established that there are mainly two species of grooved shrimp in the commercial catches--P. aztecus and P. duorarum. In order to assist fishermen to distinguish between these two species and the common shrimp, the University of North Carolina's Institute of Fisheries Research has prepared the following description and key to the various species of shrimp which are taken commercially in the waters of North Carolina. The sea-bob variety of grooved shrimp is not included in the key as it is not taken commercially on the South Atlantic Coast.

This key can be used by fishermen in all sections of the South Atlantic and Gulf Coasts to differentiate between the main species of shrimp encountered in the commercial catch. (Editors).

IDENTIFICATION

Commercially important shrimp of North Carolina fall into two groups distinguished from one another by the presence or absence of grooves along the back of the "head." If the body is divided into "head" and "tail" (cephalothorax and abdomen), then that part which is marketed is the "tail," and the part which is usually discarded is known as the "head."

The "head" bears the eyes, the feelers or "whiskers" (antennae), the horn (rostrum), the mouth and jaws, and the long, walking legs. Internally, the "head" contains the brain, the oesophagus and stomach, the heart, and most of the reproductive organs. Actually, it is a fusion of the true head and the thorax or chest of the animal and for convenience is referred to as the "head."

The "tail" bears externally the swimming legs and the fan-like legs of the last segment which, together with the middle portion, the telson, make up the true

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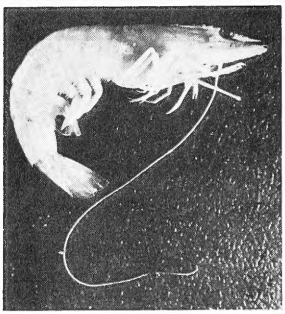
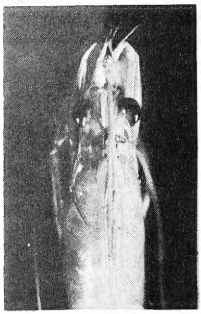
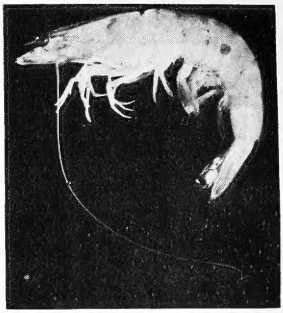


PENAEUS AZTECUS
(BROWN SHRIMP)



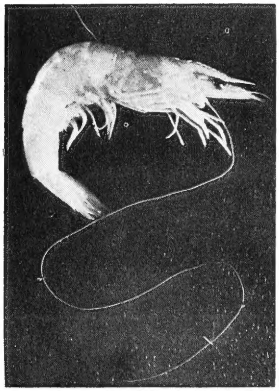
PENAEUS AZTECUS
(BROWN SHRIMP)



PENAEUS DUORARUM
(BROWN-SPOTTED SHRIMP)

tail. Internally, the "tail" contains the intestine, certain blood vessels and nerve cords and, in mature females, part of the ovaries. Again, this part of the animal (properly called the abdomen) is known conveniently as the "tail."

Although the color of shrimp is not always a valid character for distinguishing species, the two most common shrimp of the South Atlantic Coast are known as the green or white shrimp and the brown shrimp. A great many names are given to these two species, some of which are applied to both forms. As already mentioned, the most easily recognized character distinguishing the green shrimp from the brown is the head grooves of the brown shrimp.



PENAEUS SETIFERUS
(WHITE SHRIMP)

Common Shrimp: The most common shrimp of the South Atlantic Coast is known in North Carolina as the green shrimp (P. setiferus). The horn of the green shrimp is long. It is edged in dark color and blends into the head about two-thirds of the way back. The green shrimp is whitish in color and usually somewhat softer than the two brown shrimp. Its tail is edged in green. Its feelers, or "whiskers," are over twice as long as its body and are dark. The last segment of the "tail" is keeled on top and edged in dark color.

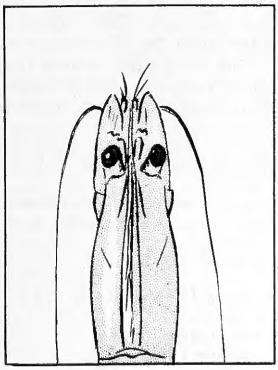
Brown Shrimp: The brown shrimp (P. azterus) is usually tinted in a brownish or orange hue. The horn is shorter than that of the green shrimp and continues as a low keel to the posterior margin of the head. It is bordered on each side by a deep groove. Its tail is edged in hues of purple or blue, ranging from a red-purple to sky blue. Its feelers are less than twice as long as its body and are usually a dull orange color. The last segment of the tail is keeled and grooved as the head.

Brown-Spotted Shrimp: A variety of brown shrimp is known as the brown-spotted shrimp (P. duorarum). This shrimp resembles the brown shrimp but has a reddish or brown spot on each side at about the middle of the "tail." In color it sometimes tends to be bluish or blue-grey. Its tail is edged in blue.

WHAT KIND OF SHRIMP DO YOU CATCH?

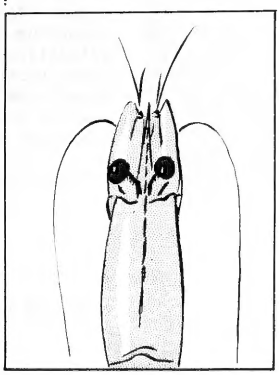
LOOK AT THE HEAD.

Is it grooved?



GROOVED HEAD

PENAEUS AZTECUS (BROWN SHRIMP)
OR
PENAEUS DUORARUM (BROWN-SPOTTED SHRIMP)



WITHOUT GROOVE

PENAEUS SETIFERUS (WHITE SHRIMP)

LOOK AT THE BODY.

Does it have a spot?

PENAEUS AZTECUS
(BROWN SHRIMP)

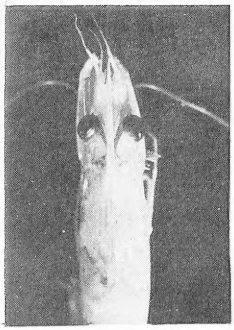
1. SHORT HORN
2. SHORT FEELERS
3. GROOVED HEAD
4. NO SPOT

PENAEUS DUORARUM
(BROWN-SPOTTED SHRIMP)

1. SHORT HORN
2. SHORT FEELERS
3. GROOVED HEAD
4. SPOT ON TAIL

PENAEUS SETIFERUS
(WHITE SHRIMP)

1. LONG HORN
2. LONG FEELERS
3. NOT-GROOVED HEAD
4. NO SPOT



PENAEUS SETIFERUS
(WHITE SHRIMP)

Common Names Used: Many different names are applied to shrimp in different localities. The same name may be used to describe two different species in different parts of the same State. Thus, blue-tailed shrimp is used to describe the brown-spotted shrimp around Beaufort and the green shrimp around Ocracoke. It is convenient to standardize these names in order to avoid confusion in identifying the various species of shrimp. Each animal has a scientific name which is the same for the same species in every part of the world. The scientific names for the three species of shrimp described are listed below with some of the common names and the localities in which these names are used:

Penaeus setiferus	Green shrimp (Southport, N. C.) White shrimp Green-tailed shrimp (Pamlico Sound) Blue-tailed shrimp (Ocracoke, N. C.) Common shrimp Lake shrimp (Louisiana)
Penaeus aztecus	Brown shrimp (Southport, N. C.) Grooved shrimp Brazilian shrimp Golden shrimp (Texas) "Brownies" Red shrimp (Texas)
Penaeus duorarum	Brown-spotted shrimp Grooved shrimp Blue-tailed shrimp (Carteret Co., N. C.) Channel shrimp (Carteret Co., N. C.)

"Red-legged shrimp" may be any species of shrimp if its legs are red. Any species of shrimp may turn bluish and its meat may become soft and white. It is then known as a "blue shrimp" or "cotton shrimp." These names may be said to describe a physiological condition rather than a species.

FISH FACTS

DO YOU KNOW .....

That fish have adapted themselves to an enormous variety of environments and only the most extreme conditions, such as the briny waters of the Great Salt Lake, or foully-polluted areas created by man, defies their existence .....

Fishery Leaflet 132

FISHERY PRODUCTS PRODUCTION AT BOSTON FISH PIER, 1948

(LANDINGS, PRICES AND TRENDS)

By John J. O'Brien*

PRODUCTION

Introduction: In 1948, 5,076 trips with 199,459,193 pounds of fish and scallops were landed at the Boston Fish Pier and sold over the New England Fish Exchange for $16,116,592.03, or a weighted ex-vessel average price of $8.08 per hundredweight (Table 1). Landings decreased one percent compared with 1947

Table 1 - Landings and Prices by Species, Boston Fish Pier, All Craft, 1948 & 1947

Species	1948 Trips	1948 Quantity	1948 Avg. Price	1947 Trips	1947 Quantity	1947 Avg. Price
	No.	Lbs.	$ per Cwt.	No.	Lbs.	$ per Cwt.
Blackback	1,391	1,679,635	11.14	1,550	2,143,054	10.53
Cod, large 1/	3,494	16,393,263	8.05	3,257	18,433,988	6.81
Cod, market 2/	3,970	18,116,983	7.38	4,111	15,563,333	6.68
Cusk	1,539	1,008,629	5.79	956	439,839	5.71
Dab	1,995	1,121,115	8.72	2,072	1,553,198	7.66
Gray sole	1,574	1,003,254	11.48	1,848	1,875,577	8.92
Haddock	3,099	58,175,348	9.95	3,649	69,839,620	8.71
Haddock scrod	3,037	47,159,610	8.44	3,491	37,129,805	6.51
Hake 3/	2,818	3,339,147	7.12	2,950	3,354,534	6.23
Halibut	860	230,597	23.93	1,009	331,770	28.65
Lemon sole	1,057	2,051,285	13.90	1,264	2,734,160	11.50
Mackerel 4/	260	3,468,997	7.39	472	13,333,052	5.86
Pollock	3,184	17,670,755	4.49	2,104	7,993,683	4.59
Rosefish (Redfish)	1,156	11,382,201	4.37	956	10,536,686	4.54
Swordfish	23	303,107	50.46	64	732,343	50.26
Whiting 5/	1,391	11,377,746	4.39	1,239	10,253,372	4.24
Wolffish (Catfish)	1,998	1,164,803	9.26	2,234	1,522,493	6.60
Yellowtail	1,164	3,258,375	6.66	1,646	3,220,552	6.29
Scallops, sea	48	220,532	52.86	35	261,036	50.38
Miscellaneous 6/	544	333,811	3.95	364	61,691	8.63
Total	5,076	199,459,193	8.08	5,466	201,323,886	7.37

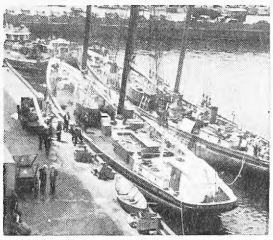
1/Includes whale cod.
2/Includes cod scrod.
3/Consists of red and white hake.
4/Consists of landings by seiners and gill netters.
5/Consists of round, steak, and dressed whiting.
6/Includes butterfish, sea herring, shad, sharks, sturgeon, rajafish, etc.

(5,466 trips with 201,323,886 pounds). Although still far below the prewar annual average of 282,392,426 pounds for the four-year period 1938 through 1941, landings in 1948 were still higher than for any year from 1942 through 1946.

This was the second postwar year during which operations were carried on free of restrictions, and the prewar level of production seems out of reach of the producing ability of the Boston fishing fleet operating under present conditions. Very little new construction has been carried on to augment the fleet and to compensate for the shorter and smaller trips now being made. The relative scarcity of fish on the usual fishing banks and the high cost of labor and materials have prevented producers from risking further investments to expand their production potentiality.

*Fishery Marketing Specialist, In Charge, Fishery Market News Service Office, Branch of Commercial Fisheries, Boston, Mass.

Preliminary tabulations of total landings received from other fishing ports show that Boston tied with San Diego, California, for third place, behind San Pedro, California (460,000,000 pounds), and Gloucester, Mass., (250,000,000 pounds).



TWO LINE TRAWLERS DOCKED AT THE BOSTON FISH PIER. ONLY TWO OF THIS TYPE NOW FISHING OUT OF BOSTON.

Production by Species: Although 1948 landings were slightly under 2 million pounds below 1947, there were some noticeable changes in the totals of individual species when compared with 1947.

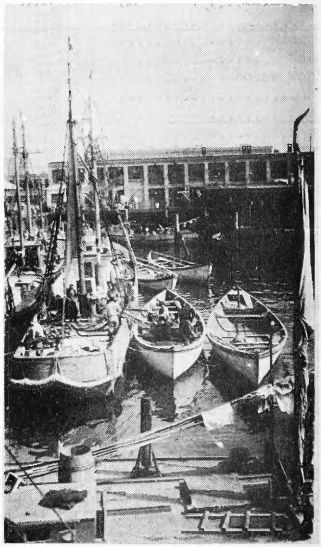
The two main varieties, haddock and cod, both showed a trend toward smaller-sized fish. Large haddock decreased 11,664,272 pounds, and haddock scrod increased 10,029,805 pounds; large cod decreased 2,040,725 pounds, market cod increased 2,553,650 pounds. These figures bear out the complaints of the fishermen that in addition to the scarcity of fish, those caught are running smaller in size.

Pollock landings increased 9,677,072 pounds, with no restrictions on production in effect. Due to the poor market for pollock in 1947, fishermen had refused to land any pollock for a time, and then later only in limited quantities.

Since mackerel purse seiners had one of their worst seasons in years, the mackerel catch declined 9,864,055 pounds.

Whiting, landings of which increased 1,114,374 pounds, is becoming more important to the fisheries of Boston and New England each year due to the expansion of the Middle West market for this variety.

Cusk, yellowtail, and rosefish landings increased, while decreases were noted for blackback, dab, gray sole, halibut, lemon sole, swordfish, wolffish, and sea scallops.



MACKEREL SEINERS AND SEINE BOATS AT THE BOSTON FISH PIER GETTING THEIR GEAR IN SHAPE FOR A TRIP.

Comparison of Offshore and Inshore Landings: Offshore vessels (over 50 gross tons) during the year landed 162,381,036 pounds or 81 percent of the total catch and the inshore craft (mostly under 50 gross tons) landed 37,078,157 pounds or 19 percent, compared to 85 and 15 percent, respectively, for 1947 (Table 2). Haddock and scrod haddock (99,762,480 pounds) accounted for 62 percent of the total offshore catch; large cod and market cod, 19 percent; pollock, 8 percent; with the remaining 11 percent made up of flounders and other varieties.

All the whiting landed was brought in by the inshore craft, and accounted for 30 percent of the total inshore landings. The remainder of the inshore landings was comprised of rosefish (16 percent), haddock and scrod haddock (15

Table 2 - Landings by Offshore Vessels and Inshore Craft at Boston Fish Pier, 1948

Species	Offshore		Inshore		Total		
					Combined	Offshore	Inshore
	Lbs.	%	Lbs.	%	Lbs.	%	%
Blackback	1,336,770	1	342,865	1	1,679,635	80	20
Cod, large[1]	14,212,120	9	2,181,143	6	16,393,263	87	13
Cod, market[2]	16,222,280	10	1,894,703	5	18,116,983	90	10
Cusk	356,095	*	652,534	2	1,008,629	35	65
Dab	516,410	*	604,705	1	1,121,115	46	54
Gray sole	389,347	*	613,907	2	1,003,254	39	61
Haddock	54,425,055	34	3,750,293	10	58,175,348	94	6
Haddock, scrod	45,337,425	28	1,822,185	5	47,159,610	96	4
Hake[3]	899,800	1	2,439,347	7	3,339,147	27	73
Halibut	222,627	*	7,970	*	230,597	97	3
Lemon sole	2,035,090	1	16,195	*	2,051,285	99	1
Mackerel[4]	3,390,495	2	78,502	*	3,468,997	98	2
Pollock	13,172,910	8	4,497,845	12	17,670,755	75	25
Rosefish (Redfish)	5,492,785	3	5,889,416	16	11,382,201	48	52
Swordfish	302,959	*	148	*	303,107	100	*
Whiting[5]	-	-	11,377,746	30	11,377,746	-	100
Wolffish (Catfish)	944,970	1	219,833	1	1,164,803	81	19
Yellowtail	2,837,230	2	421,145	1	3,258,375	87	13
Scallops, sea	220,532	*	-	-	220,532	100	-
Miscellaneous[6]	66,136	*	267,675	1	333,811	20	80
Total	162,381,036	100	37,078,157	100	199,459,193	81	19

*Less than one-half of one percent.
1/Includes whale cod.
2/Includes cod scrod.
3/Consists of red and white hake.
4/Consists of landings by seiners and gill netters.
5/Consists of round, steak, and dressed whiting.
6/Includes butterfish, sea herring, shad, sharks, sturgeon, rajafish, etc.

percent), pollock (12 percent), large cod and market cod (11 percent), and other species (16 percent).

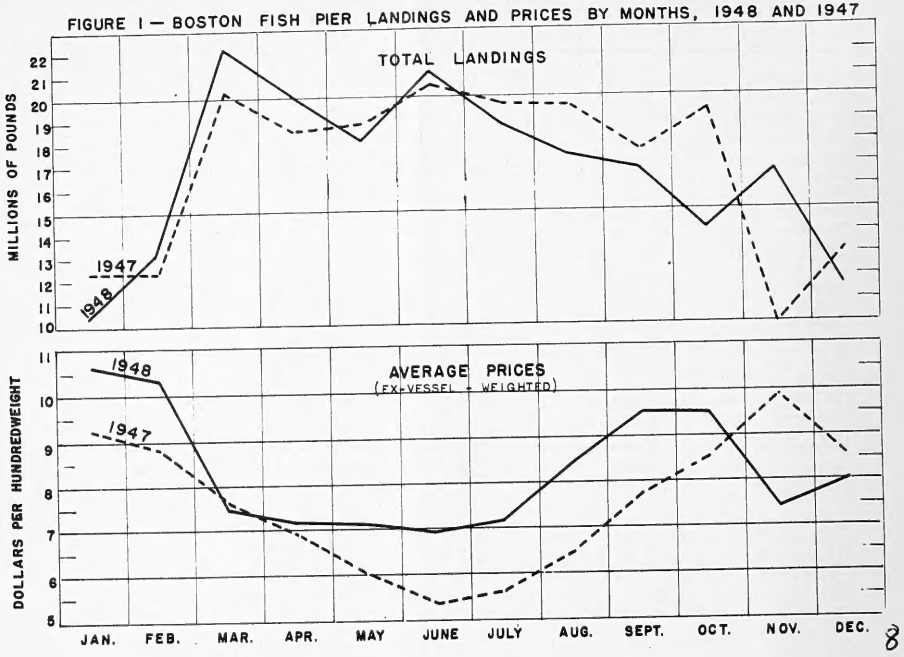
Monthly Distribution of Production: The heavy production period in 1948 was between March and September, when milder weather permits smoother fishing operations at sea, and when the inshore fleet is more active (Figure 1, see page 8). March, with landings of 22,105,837 pounds, was the month of highest production for the first time since 1940. June had been the leading month for the past three years. The month of lowest production was January in 1948 and November in 1947.

Monthly landings followed the same trend in 1948 as they did in 1947, with the exception of October and November. There is a wide variety of weather conditions in the North Atlantic during these fall months, and production is unpredictable. Relationship of production to prices is evident by the relative decline in prices which results with increased landings.

Fishing Fleet and Average Catch Per Trip: The 1948 average offshore trip of 93,161 pounds for the 1,701 offshore trips (exclusive of mackerel seiners, swordfish harpooners, and scallop draggers) increased 22 percent over the 1947 average of 76,494 pounds. Catch limitations in effect during most of 1947 accounted for that year's low trip average. However, the 1948 average trip is well below the prewar average.

Offshore trips were generally limited to nine days (dock to dock) for vessels fishing on Georges Bank, and ten days for trips farther east. These time

FIGURE 1 — BOSTON FISH PIER LANDINGS AND PRICES BY MONTHS, 1948 AND 1947



limitations are self-imposed to assure higher quality fish and the resultant higher prices, but result in smaller catches. However, the soundness of this practice is evident in the fewer resales compared to prewar trips, when poor quality of the older fish brought as many as five sell overs. No other restrictions or limitations were in effect during 1948 to hamper the operations of the offshore fleet.

As has been the practice for the past several years, offshore vessels did most of their fishing on Georges Bank where haddock and cod are the most abundant species. Some trips were made farther east to Western Bank, while a few trips were made to the Channel. However, due to its proximity to Boston, the Channel has been almost "fished out," and longer trips to the other grounds are necessary. Fishermen have been complaining for the past number of years on the scarcity of haddock on Georges Bank, due to the recent extensive fishing. The Service's Branch of Fishery Biology has carried on extensive investigations of the haddock on Georges Bank to find the cause of this reported gradual depletion, and to suggest corrective measures.

At the end of the year, the Boston offshore fishing fleet consisted of 52 large otter trawlers (over 150 gross tons), 9 medium otter trawlers (50 to 150 gross tons), and 2 line trawlers. Vessels from other ports, mostly medium otter trawlers, made a number of trips to Boston supplementing the production of the local fleet. During the year, three new large trawlers were added to the fleet and one former trawler returned from Government service. Lost to the fleet were four trawlers sold to Canadian and Newfoundland interests, and three vessels that went into apparent retirement.

On December 20, the Army announced its plan to purchase a number of large fishing vessels for loan to Bizone Germany.1/ From the specifications announced, it was evident that all these vessels would come from the local fleet. Boat owners were receptive to the idea provided a satisfactory price was offered, while fishermen complained that they would suffer from the loss of a number of vessels. Such a reduction without some replacement will greatly reduce the future fishery production at Boston.

MEDIUM OTTER TRAWLERS DOCKED AT THE BOSTON FISH PIER.

The inshore fleet, comprising 15 medium and 30 small otter trawlers (under 50 gross tons) and 22 small line trawlers, had a successful year. Weather plays an important part in the operations of these smaller craft, and in 1948, there were only very few periods when they were handicapped by foul weather. These craft made 3,103 trips with an average trip of 11,949 pounds, compared to 2,898 trips with an average trip of 10,634 pounds in 1947.

The inshore craft confined their activities mostly to Massachusetts Bay. Otter trawlers (draggers) fished for whiting from May to November, and cod and pollock the remainder of the year, with occasional trips for rosefish. Line trawlers, operating closer to shore, fished mostly for cod and haddock.

UNLOADING AND BARRELING MACKEREL AT BOSTON FISH PIER.

On June 8, the Massachusetts Legislature enacted a bill which prohibited the operation of draggers within the three-mile limit along most of the Massachusetts coast. This bill's restrictions would affect the draggers' operations in mid-summer when it is often necessary to "chase" the whiting quite close to shore, and again during the winter when foul weather forces them to fish closer to shore. This bill was passed without the knowledge of the local fishermen, and at the request of lobstermen who claimed damage to and loss of their gear by dragging operations. A move has been started by the local draggers through their association to put through a revised bill which will open some of the areas during the winter months.

There were no new developments in the gear used or fishing methods practiced by the fleet. However, the fishermen are always receptive to new ideas which might improve the efficiency of their gear and benefit them economically. The gear and equipment industry has worked closely with the fishermen in this respect.

Fishermen continued to operate under the same lay as in 1947. This lay divides the gross stock with 60 percent for the fishermen and 40 percent for the boat owner, after certain deductions.

1/Twelve large otter trawlers from the Boston fleet were sold to the Army in 1949.

Seasonal Fisheries Have Poor Year: The 1948 mackerel season was a very poor one. Only 260 mackerel fares with 3,468,997 pounds were hailed, mostly by purse seiners, at the Boston Fish Pier during the year. This is 74 percent below 1947 when 472 fares landed 13,333,052 pounds. Except for a short period during June and July, the seiners made very few successful trips. From the first part of August to the end of the season only a few large schools of mackerel could be located, and many seiners converted back to trawling earlier than anticipated. Tuna and blackfish (a whale), common enemies of the mackerel, were observed following the mackerel schools in larger number than for some years, and the scattering of the mackerel schools was attributed to them.

Only 22 trips with 303,107 pounds of swordfish were landed by swordfish harpooners during the year, while in 1947, there were 64 trips with 732,343 pounds. Many harpooners became discouraged after only one trip when the catch for two weeks of fishing was no more than a dozen fish.

The sea scallop fishery continues to be of minor importance to Boston. Only nine scallop draggers made 48 trips and landed 261,009 pounds of scallops, compared with prewar years when anywhere from 125 to 150 trips landed over 1,500,000 pounds each year.

VALUES AND PRICES

Value of 1948 Landings High: In spite of the comparatively low production, the 1948 ex-vessel value of $16,116,592.03 was the highest ever recorded at Boston. This was an increase of $1,277,973.28 over the previous high of $14,838,618.75 received in 1947. The offshore fleet received $13,820,234.49 or 86 percent of this total value, and the inshore fleet $2,296,357.54 or 14 percent (Table 3).

Table 3 - Values of Offshore and Inshore Landings at Boston Fish Pier, 1948

Species	Offshore		Inshore		Total Combined	Total Offshore	Total Inshore
	Value	%	Value	%	Value	%	%
Blackback	140,032.19	1	47,094.56	2	187,126.75	75	25
Cod, large[1]	1,114,067.78	8	205,249.79	9	1,319,317.57	84	16
Cod, market[2]	1,186,354.44	9	150,132.51	7	1,336,486.95	89	11
Cusk	21,458.28	*	36,986.38	2	58,444.66	37	63
Dab	48,802.06	*	48,907.62	2	97,709.68	50	50
Gray sole	42,962.03	*	72,240.62	3	115,202.65	37	63
Haddock	5,369,888.52	39	419,688.36	18	5,789,577.88	93	7
Haddock, scrod	3,820,151.90	28	161,304.48	7	3,981,456.38	96	4
Hake[3]	83,905.54	1	153,978.78	7	237,884.32	35	65
Halibut	51,892.85	*	3,288.40	*	55,181.25	94	6
Lemon sole	282,922.32	2	2,130.29	*	285,052.61	99	1
Mackerel[4]	250,916.18	2	5,563.01	*	256,479.19	98	2
Pollock	606,408.54	4	186,126.58	8	792,535.12	77	23
Rosefish (Redfish)	264,328.26	2	233,146.53	10	497,474.79	53	47
Swordfish	152,880.37	1	81.40	*	152,961.77	100	*
Whiting[5]	-	-	499,062.10	22	499,062.10	-	100
Wolffish (Catfish)	88,415.55	1	19,487.60	1	107,903.15	82	18
Yellowtail	174,539.26	1	42,437.37	2	216,976.63	80	20
Scallops, sea	116,583.61	1	-	-	116,583.61	100	-
Miscellaneous[6]	3,723.81	*	9,451.16	*	13,174.97	28	72
Total	13,820,234.49	100	2,296,357.54	100	16,116,592.03	86	14

Footnotes same as Table 1, page 5.

For all fish landed, the average price was $8.08 per hundredweight--an increase of 11 percent over the 1947 average of $7.37, but below the 1943 average of $8.82 and the 1946 average of $8.67.

All species brought higher average prices except for halibut, pollock, and rosefish. The largest increases were noted for wolffish, scrod haddock, gray sole, and mackerel, in that order.

Highest prices were received in January, the month of lowest production, and the average for the month was $10.63. Lowest prices were received in June when the average was $6.92 (Figure 1, see page 8). The price trend for 1948 followed the 1947 trend except that it was at a higher level.

DEMAND AND MARKET

Demand Generally Good--Market Steady: The 1948 demand at the Boston Fish Pier was generally good during most of the year. However, during the last two months the demand dropped sharply. Although there is usually a seasonal falling off in demand at the end of the year, it was particularly evident this year since production, due to exceptionally good weather, remained at a high level. The first dip in meat prices in over two years, and the reluctance of the fishery industry to follow suit, probably resulted in consumer resistance for fishery products at the prevailing prices.

BOARD IN THE AUCTION ROOM OF THE NEW ENGLAND FISH EXCHANGE ADMINISTRATION BUILDING, BOSTON FISH PIER. SHOWS THE HAILING FARE OF EACH INSHORE DRAGGER AND LINE TRAWLER DOCKED AT THE PIER.

The frozen fish market was affected considerably towards the end of the year by the slackened demand since this market depends on higher winter prices to compensate for the added cost of freezing and storage. Dealers who had frozen large quantities of fish during the summer were becoming alarmed as the year ended.

The market was steady, and even strong at times, except for the last two months of the year when it weakened considerably. Prices were good all year, and the average ex-vessel price was almost 3/4 cent per pound higher than in 1947.

Shippers' Market: The Shippers' Market supplied the Boston dealers with many fresh and frozen fish varieties not landed at the Fish Pier. These dealers provided the lobsters from Maine and Canada, halibut and salmon from the West Coast, shrimp from the South, smelt from Maine and Canada, and Middle Atlantic varieties, such as scup, butterfish, fluke, etc. They also supplemented the local production with scallops and flounders from New Bedford, swordfish from Canada, Japan, and South American, and mackerel from various points. At one time, this market was almost entirely a straight commission business. Now most items are bought. This market enjoyed a good demand for most varieties in 1948, although there were periods when some frozen items moved quite slowly. In general, the market was steady.

PROCESSING

It is estimated that 90 percent of the fish landed at Boston is cut into fillets, and that 90 percent of the fillets are frozen. In recent years, the fresh fillet trade has dwindled to an unimportant position. This is easily understandable due to the greater durability of the frozen product which allows for wider and more distant markets. Also, improved methods of freezing have brought about an improved product.

Some advancement was made in the field of packaging during the year. Most important was the increase in the use of the one-pound package. This size package allows for additional retail outlets and has good consumer appeal, but it has its problems. Fillets must be trimmed or cut to size, involving waste and added labor cost. Until recently, only one dealer had ventured into this field, using one-pound slices or chunks. This idea was expanded to most varieties landed at Boston, and toward the end of 1948, many others were putting up one-pound packages.

There was practically no expansion during the year, most wholesalers confining their added investments to improvements and renovations. Some plants were remodeled and new equipment, including new fillet production lines, were installed.

There was no increase in the freezing capacity for fishery products at Boston. Cold storage capacity was increased by about 500,000 pounds when one firm (formerly handled no fish) assigned one floor of its new plant exclusively for the holding of frozen fish.

LABOR

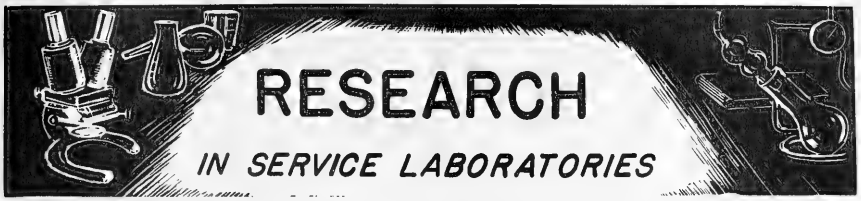
No Labor Disputes: There was no time lost on vessels or in shore plants during the year due to labor disputes. The Seafood Workers' Union did gain some advantages, including wage increases, through settlement of disagreements before State and Federal conciliators.

TRANSPORTATION

Out-of-State Shipments Delayed for Short Period: The transportation of fish from Boston to out-of-State consignees was hampered somewhat for a few days beginning January 1, 1948, due to a labor dispute between management and the local truck drivers' union. Later, the truck drivers' union agreed to move all food while the dispute was in progress. There was no tie-up of shipments within the State, but movement of out-of-State shipments to railheads were delayed due to limited facilities available.

IMPORTS

Imports of Fillets Increase: Fishery leaders in Boston have become alarmed over the importation of groundfish fillets as the Boston market is affected considerably by these imports. These leaders joined together with other groups from various sections of New England and the country in petitioning Congress to enact some legislation limiting these imports. United States imports of groundfish (including rosefish) fillets during 1948 amounted to 53,566,452 pounds, an increase of 54 percent over the 1947 total of 35,093,435 pounds, and 443 percent over the 1941 total of 9,931,030 pounds. Most of these imports came from Canada, Newfoundland, and Iceland.



October 1949

NUTRITION: Salmon cannery waste samples collected and processed during the past few months were crated and shipped to the Leavenworth (Washington) hatchery for feeding tests to be conducted next spring.

* * *

Extensive tests were made in connection with adapting vitamin B_{12} assay methods to fishery products. It was considered necessary to make several modifications in the formula of the media being used in order to get consistent results.

PROCESSING: Several series of tests were carried out on preservation of salmon eggs. It was found that a minimum process of 45 minutes at 8 pounds pressure was required to preserve pink salmon eggs in 1/2-pound flat cans. A series of tests were then begun to find out how much this processing could be diminished by combining chemical preservation with the heat process. Various concentrations, either alone or in combination, of several chemicals are being tested.

ANALYSIS: Studies on methods of extracting the vitamin B_{12} from fishery products have been started. Results to date indicate that cold water extraction may be just as efficient as use of enzymatic digestion.

* * *

In tests on the oil analysis in fish meal, a series of experiments were carried out in which fish meal was refluxed with acetone for various periods of time, the solution then filtered through sintered glass crucibles, and the extractives recovered and weighed. It was found that after a comparatively short refluxing period as much or more extractives were obtained than was the case with much longer extraction in soxhlet equipment. Also, slightly more extractives were obtained by the refluxing procedure than could be obtained by the soxhlet extraction plus the extractives obtained after hydrochloric acid digestion.

REFRIGERATION: In connection with the freezing-fish-at-sea project, samples of cod, haddock, hake, and pollock were prepared from fresh, round fish obtained from gill-net fisherman. Samples were frozen in the round in circulating brine maintained at 0° F. while others were frozen in the round at -15° F. under forced air draft. A third set was gutted and iced to serve as a control. Some samples were bled before brine freezing. After a short storage period, the frozen samples were thawed in circulating sea water. Both the thawed and iced samples were cut and the fillets were packaged for freezing and storage. A complete set of weights was taken at each handling of the fish for the determination of yield values.

* * *

Five series of frozen pink salmon were thawed after six weeks of storage at 0° F. and canned in order to study the effect of freezing and storage on the canned product. The variables being considered included glazing, dressing or eviscerating, and freshness of the fish before freezing.

* * *

Several lots of frozen lobsters and lobster meat were prepared for storage studies.

* * *

TECHNICAL NOTE NO. 1 - APPARATUS FOR WEIGHING AND TRANSFER OF MATERIALS

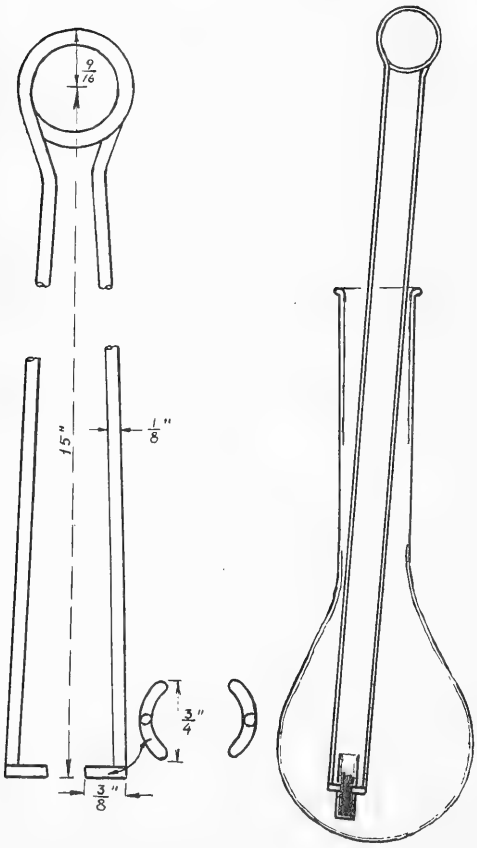


ILLUSTRATION OF THE TONGS AND THEIR USE IN TRANSFERRING A GLASS CELL TO A KJELDAHL FLASK.

In the determination of nitrogen in fish meal by the Kjeldahl method, transfer of the weighed material to the Kjeldahl flask without loss is difficult. This step can be simplified by weighing the sample in a small glass cell and then transferring the cell with its contents to the Kjeldahl flask by means of a pair of tongs especially designed for that purpose. This method has been found to be especially satisfactory for use with other finely divided materials and for use with fish flesh and fish livers varying in consistency from near solid to liquid.

The procedure need not be confined solely to use with Kjeldahl flasks, as the same technique can be employed in the transfer of precisely weighed quantities to containers of other types.

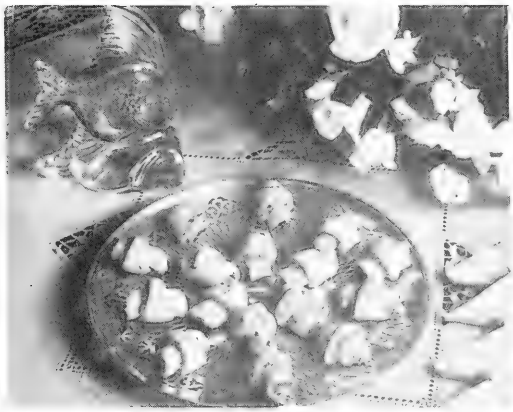
The glass cells can be fashioned from flat-bottom shell vials. For use with 500 ml. Kjeldahl flasks, vials with a diameter of from 18 to 22 mm. are convenient. Ordinarily, these vials as purchased are too long, but they may be cut and dressed to any convenient length - 20 to 40 mm. will usually be satisfactory. When volatile materials are to be weighed, a cap can be made by using a second vial, cut to a suitable length, the inside diameter of which matches the outside diameter of the weighing cell.

The tongs, which have an overall length of 16 inches, can be fashioned from a medium-spring-steel rod,

1/8 inch in diameter. The tips can be made from 1/8-inch flat brass, suitably curved to grasp the glass cells, and are attached to the spring steel rods by brazing. The spring spiral, at the other end of the tongs, has a diameter of one inch.

—William Clegg, Chemist,
Seattle Fishery Technological Laboratory.

SMOKED SALMON ROLLS



1 7-oz. can smoked salmon
1 teaspoon horse-radish
2 tablespoons lemon juice
1 teaspoon onion, grated
4 tablespoons mayonnaise or salad dressing
1 cup prepared pastry mix
Paprika

Drain salmon and flake. Add seasonings and mayonnaise and blend into a paste. Prepare pastry according to directions on package. Divide in half. Roll very thin in circle about 9 inches in diameter. Spread pastry with salmon mixture. Cut into wedge-shaped pieces and roll in jelly-roll fashion, beginning at round edges. Score top of rolls with a fork and sprinkle with paprika. Bake in a hot oven 425° F. for about 15 minutes or until brown. Serve hot or cold. Makes approximately 30 rolls.

A Fish and Wildlife Service tested recipe. This is one in the series of recipes using fishery products tested and developed in the Service's test kitchens.

Additions to the Fleet of U. S. Fishing Vessels

A total of 77 vessels of 5 net tons and over received their first documents as fishing craft during September 1949--40 less than in September 1948, according to the Bureau of Customs of the Treasury Department. Washington and California led with 13 vessels each, followed by Louisiana with 9. During the first nine months of 1949, a total of 804 vessels were documented, compared with 962 during the same period in 1948.

Vessels Obtaining Their First Documents as Fishing Craft, September 1949

Section	September		Nine mos. ending with Sept.		Total
	1949	1948	1949	1948	1948
	Number	Number	Number	Number	Number
New England	2	3	27	42	52
Middle Atlantic	1	2	39	36	40
Chesapeake Bay	6	9	55	45	59
South Atlantic and Gulf	30	68	273	423	541
Pacific Coast	31	29	293	1/300	1/348
Great Lakes	2	3	33	36	51
Alaska	5	2	80	72	81
Hawaii	-	1	3	8	12
Unknown	-	-	1	-	-
Total	77	117	804	1/962	1/1,184

1/Revised.
Note: Vessels have been assigned to the various sections on the basis of their home port.

California Adds New Marine Research Vessel

California's newest marine research vessel has completed its test runs and is now operating in the Pacific under the flag of the State's Division of Fish and Game, according to the agency's Outdoor California of October 19, 1949.

Rechristened Yellowfin, the 114-foot surplus Army freight and personnel carrier was converted by the Bureau of Marine Fisheries at a cost exceeding $100,000. It is powered by twin six-cylinder diesel engines, 640 hp., and has a cruising speed of 12 knots.

In its long-range research missions, it will use radar, sonar, short-wave radio, automatic steering, fathometer, bathythermograph, and the latest in technical fishing gear.

Ten crew members and three marine biologists make up the normal complement for cruises up to 4,000 miles.

From its San Pedro headquarters, the Yellowfin will seek out schools of fish to determine size and species. At the same time, data on physical and chemical conditions in the ocean where the fish are found will be collected and correlated with other information gathered by the agency's 100-foot M. V. Scofield, and vessels operated by the University of California.

California Landings of Fishery Products, 1948

The quantity of fish and shellfish landed by commercial fishing craft in the State of California during 1948 amounted to 897,737,718 pounds, an increase of over 104,000,000 pounds compared with 1947, according to the California Division of Fish and Game. The major species responsible for this increase were pilchards with an increase of 106 million pounds and tuna and tuna-like fishes with an increase of almost 45 million pounds. The landings of jack and Pacific mackerel were 63 million pounds below the previous year.

California Landings of Fishery Products, By Areas, 1948 & 1947

Area	1948	1947
	(in pounds)	
Eureka	33,593,924	31,052,270
Sacramento	3,358,043	4,040,961
San Francisco	23,761,958	15,446,925
Monterey	137,654,847	76,128,022
Santa Barbara	38,326,139	22,615,527
Los Angeles	340,241,593	392,710,752
San Diego	14,990,133	10,508,297
From waters north of the State Boundary	2,136,335	1/
From waters south of the International Boundary	303,674,746	240,762,151
Grand Total	897,737,718	793,264,905

1/Included with local catches.

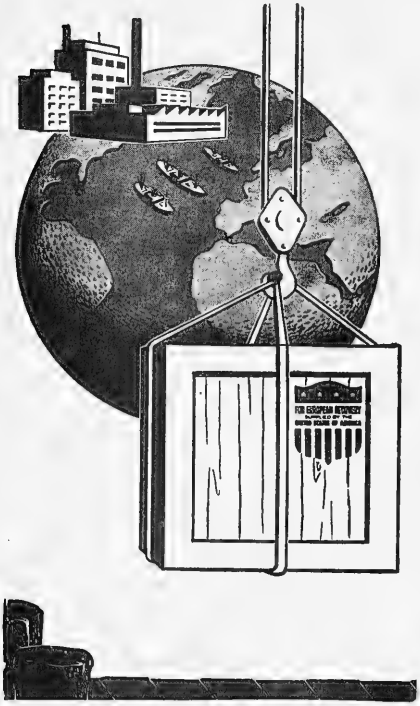
Fish and Shellfish Landed in California, 1948 & 1947

Item	1948	1947
	(in pounds)	
Total Fish	840,463,812	761,074,063
" Shellfish	37,273,906	32,190,842
Grand Total	897,737,718	793,264,905
Principal Species:		
Pilchards	361,906,747	255,513,948
Tuna & tuna-like fishes:		
Albacore	34,481,013	13,145,780
Bluefin	6,528,807	20,837,634
Skipjack	58,752,316	52,315,449
Yellowfin	191,635,651	149,066,794
Bonito	2,125,737	13,697,171
Yellowtail	10,445,663	9,952,761
Total	303,969,187	259,015,589
Jack mackerel	72,864,675	129,048,318
Pacific mackerel	39,385,796	46,477,205
Sole	21,653,927	12,332,749
Anchovy	10,835,930	18,940,521
Salmon	7,767,886	11,428,030
Squid	19,255,687	14,542,649
Abalone	3,227,988	2,669,950

ECA Procurement Authorizations for Fishery Products

No fishery products were included among the procurement authorizations for commodities and raw materials announced by the Economic Cooperation Administration during October this year. In October 1948, $4,120,000 was authorized for fishery products. The total authorized for fishery products since the beginning of the ECA program on April 1, 1948, through October 31, 1949, was $34,340,911.

There was a cancellation of $500 during October which was to be used for the purchase of fish meal from Portuguese African Dependencies for delivery to Bizone Germany.



Made public during the month was a report to ECA by a special ECA-Department of Commerce mission to Europe last May to study trade problems, which stated, in substance, that trade of the United States with western Europe and the rest of the world is so badly unbalanced that this country in its own interest, as well as that of Europe, must seek a fundamental solution based primarily upon greatly expanded imports to the United States.

In accordance with an ECA program to give small independent firms a greater chance to supply goods to European recovery announced in September, ECA announced in October the establishment of an inquiry and export counseling group to aid small businessmen on their export problems under the Marshall Plan. This is the first of five steps to give small business enterprises information which may enable them to share more fully in European recovery orders. The ECA Office of Small Business pointed out that the businessmen can utilize the export counseling service by letter or by personal consultation. Arrangements also have been made with the Department of Commerce whereby its 42 field offices will render assistance to small businessmen seeking information on ECA operations, and these offices can furnish, among other services, the names and addresses of firms abroad importing specific products. Assistance to small businessmen includes explanations of ECA's price provisions as a guide to sellers in conducting negotiations; information on documentation; advice on regulations governing the handling of overseas shipments; explanations of ECA marking requirements; and information on how the ECA Commodity Supplier Data may be used as a guide for finding potential European purchasers.

Federal Purchases of Fishery Products

DEPARTMENT OF THE ARMY, September 1949: Fresh and frozen fishery products purchased by the Army Quartermaster Corps during September 1949 for the U. S. Army, Navy, Marine Corps, and Air Force for military feeding totaled 1,872,844 pounds (valued at $639,460). Purchases during the month increased 7 percent in

quantity and 26 percent in value over August this year and 19 percent in quantity and 12 percent in value over September 1948.

Purchases of Fresh and Frozen Fishery Products by Department of the Army
(September and Totals for Nine Months, 1949 and 1948)

QUANTITY				VALUE			
September		January-September		September		January-September	
1949	1948	1949	1948	1949	1948	1949	1948
lbs.	lbs.	lbs.	lbs.	$	$	$	$
1,872,844	1,571,665	12,962,832	12,672,316	639,460	569,821	4,276,365	4,501,819

Total purchases for the first nine months this year were 2 percent higher in quantity, but 5 percent lower in value, compared with the corresponding period a year ago.

Fishery Biology Notes

BEAUFORT SHELLFISH LABORATORY PROJECTS: Physiological and biochemical researches on the metabolism of shellfish is the objective of the Service's Shellfish Laboratory at Beaufort, North Carolina. This laboratory was reactivated in September this year.

Experimental projects to be undertaken are:

(1) Studies of the sources of supply of the various elements entering into the nutrition of shellfish.

(2) Effect of radioactivity resulting from the introduction of various elements into the tissues and organs of shellfish.

(3) Metabolism of the various elements required for the growth and reproduction of shellfish.

INDIRECT EFFECTS OF SEA LAMPREYS ON GREAT LAKES FISHERIES: The transfer of fishing activity from lake trout — which are being destroyed in the Great Lakes by the parasitic sea lamprey — to other fish, like the chub, threatens the commercial fish resources of the Great Lakes, and the indirect effects of the sea lamprey on the fishery are as important and destructive as the direct effects, the Service reported in October.

Lake Huron's trout fishing has been completely destroyed by the sea lamprey, Lake Michigan's is 50 percent reduced, and Lake Superior's potentiality is 30 percent below that of former years — the latter's decline caused by the increased rate of exploitation, rather than by direct attack of the sea lamprey. This decline in the trout fisheries has caused fishermen to redirect their efforts to other species of fish.

The take of chubs in Lake Michigan has increased more than 400 percent in the last few years. Commercial fishermen are greatly concerned about the maintenance of the fishery under this increased catch.

Fishery scientists at the Service's Great Lakes Laboratory at Ann Arbor, Michigan, emphasize that any program directed toward the study and control of the sea lamprey must take account of these indirect effects of the sea lamprey (such as increased exploitation of the remaining trout and the redirecting of commercial fishery activities toward other varieties of fish), as well as the direct attacks of the lamprey on trout. Government scientists are at present working on methods of lamprey control, and Congress recently made additional funds available for the study.

NORTH ATLANTIC FISHERY INVESTIGATIONS: Georges Bank Haddock Fishery: About 94,196,000 pounds of haddock have been landed from Georges Bank in the average year over the period 1931 through 1948 by all fishermen, or about 36,875,000 individual fish. Average weight of each fish was 2.55 pounds.

During the first nine months of 1949, the baby scrod destruction on Georges Bank was estimated at 2,776,000 pounds, compared to 2,618,000 and 7,897,000 pounds in similar periods of 1948 and 1947, respectively. Responsible for the decrease is believed to be the small sizes of year classes since the 1945-year class rather than a change in fishing practices.

Rosefish Fishery: The Gulf of Maine is still producing a considerable amount of rosefish. Of the 176,000,000 pounds landed in Gloucester during 1948, about 35 percent came from the Gulf of Maine, but the area no longer produces a "pure" trip. Rosefish that do come from there are merely small parts of trips made by vessels in passing through. These vessels report that the Gulf fish are very small.

Sea Scallop Fishery: Index of sea scallop abundance shows that landings have been steadily on the increase since 1942, with a corresponding decrease in abundance. This decrease has not been great enough to cause any serious concern to the fishermen. Ten-day-trips and 100-gallons-per-man catch limits have helped to prevent the abundance from dropping faster. Discovery of new beds has eased the pressure on the more commonly fished beds.

OBSERVATIONS ON DESTRUCTION OF MOLLUSKS BY CRABS: The Service's Milford, Connecticut, Shellfishery Laboratory has been conducting experiments in the aquaria and outdoor tanks to establish once more the rate of damage that various species of crabs could cause to oyster set. The results showed that any species of local crabs possessing strong claws will attempt to crush oyster set if other food is not available. The crabs prefer other food, such as dead fish, if it is present.

The destruction of other mollusks by crabs was also observed. Blue crabs opened and devoured some quahogs (Venus mercenaria) measuring over two inches in size. The crabs crushed and ate large numbers of soft clams, especially those of small size. Therefore, it is concluded that in nature crabs cause heavy mortality among clam set and young clams.

SERVICE RECEIVES EUROPEAN OYSTERS FOR EXPERIMENTAL PURPOSES: The Service's Milford Shellfishery Laboratory in Connecticut reported the arrival on October 11 of the European oysters, Ostrea edulis, from the Netherlands. Most of them arrived alive but gaping. After being placed in water, they showed satisfactory and rapid recovery, and at present are acting quite normally. Although they were out of the water approximately fourteen days before reaching this country, mortality was relatively low. Some of them will be used in experiments at the Milford Laboratory; others at the Service's Laboratory at Boothbay Harbor, Maine.

SERVICE TO COMBAT STARFISH IN LONG ISLAND SOUND: The Service's Shellfishery Laboratory at Milford, Connecticut, is concentrating its efforts during November and December to combat the starfish, a natural enemy of the oyster.

For several years, surveys showed the presence of two very large concentrations of starfish short distances outside the cultivated oyster areas near New Haven.

Regular bulletins to the oystermen from the laboratory have called attention to the starfish problem and suggested that the growers eliminate them before they spread to the cultivated beds.

These masses of starfish are now overrunning the oyster beds of the New Haven and West Haven areas. In response to requests from the oyster growers, the Service will render emergency assistance during the critical period.

It is important to note that one of the small non-commercial clams, Mulinia lateralis, has disappeared. It played a definite role in the economy of Long Island Sound because it served as food for the masses of starfish concentrated on the uncultivated grounds. This clam at one time was very common in the Milford waters. Since its disappearance, the starfish, have moved to the cultivated oyster beds searching for new food supplies.

SPONGE DISEASE OFF FLORIDA VERIFIED: Reports that a disease again was killing sponges in that section of the sponge fishery off the west coast of Florida lying between Anclote Key and St. Marks led to a survey of conditions by the Service in cooperation with the Marine Laboratory of the University of Miami and the Florida Board of Conservation.

Using the Service's research vessel, Pompano, and a sponge-diving boat, the area was worked during the period September 8 to 14, 1949. In general, evidence was found that a disease is killing sponges and that the population of sponges is so low on the grounds that the entire sponge fleet based at Tarpon Springs is tied up and unable to make expenses on a trip.

FAO Concludes First Meeting On Herring Industry 1/

The Herring Meeting called by the Food and Agriculture Organization of the United Nations, which on September 2 concluded a week's deliberations at The Hague, was concerned with all aspects of the herring industry, according to a September 9 FAO news release. This was the first meeting sponsored by FAO on this commodity which occupies so important a place in the economic life of some countries. The invitations were extended only to producing countries, since it was felt that the problems of the industry had to be investigated first from the production, processing, and marketing sides. Consumer countries will be brought into future discussions as will also the countries concerned with sardines and other species of the herring family.

In the preliminary discussions it was agreed that, in the absence of representatives of countries with a substantial interest in European sardines, and in view of the heavy agenda, more progress would be made if the discussions were confined to the herring problems. It was recognized that problems confronting the European sardine industry were equally pressing but that another occasion should be selected for discussion of these, preferably at a point in Southern Europe.

1/See Commercial Fisheries Review, September 1949, page 47.

Although the techniques of catching herring and the many processes used in their preparation for sale to the consumer were extensively examined by the meeting, a good deal of emphasis was placed on the economic problems of the industry. The loss of historical markets, the decline in consumption of herring in certain forms, particularly salted herring, and the disruption of international trade were among the topics explored.

The trade aspect is a most important one, as a number of the most important herring producers are small countries with a small population quite incapable of absorbing the available herring. Consequently they must rely heavily on export markets in order to maintain the industry.

The challenge to the producing industry is one of improving the technical processes to turn out a product that will find favor not only with people accustomed to eating herring, but will also attract the consumer less familiar with herring products. Being a cheap food, the herring does not lend itself to processes or to packaging and types of transport that would add much to the price.

It was recommended that market research should be carried on through the FAO secretariat in regions where herring by tradition forms a part of the diet. Sizable increases might well be possible if consumer demand were more carefully studied and greater publicity given to the nutritional value of herring products. Evidence brought before the meeting indicates however that even if such attempts were successful, all the outlets which are necessary for an increasing herring production could hardly be found in traditional markets. The meeting felt that it was necessary therefore to study also the potential market outlets on a somewhat broader basis. It recommended a study of the dietary need for nutrients contained in herring. As one of the steps necessary in order to translate this need into effective demand, the meeting recommended a study of methods which might be used for processing herring into a form which is more acceptable to the consumers of Asia and Africa.

The Preliminary Report of the Meeting contained the following section on future action:

It is abundantly clear from the free and informal deliberations of this exploratory meeting that some further action should be taken to attempt a solution of at least some of the problems now facing the herring industry. No single remedy is likely to be found, but some measures can be taken that will influence the situation. Emphasis was placed on the investigations of product forms that might be suitable for consumers in other regions, on dietary and economic market research, and on studies of operational costs within the industry. The more complex problem of currency will be solved only when a solution has been found in the wider field of trade and commerce. None of the problems is likely to solve itself.

Some of the suggestions for remedial action have already been stated in the preceding pages, but they may be restated in this final chapter of the report.

It is believed that the meeting has served a most useful purpose. The knowledge gained should not be lost but should form a basis for further study and practical application in the future. The Meeting suggests, therefore, that the following are some of the practical steps that might be taken by FAO:

1. Bring together technologists to examine the possibilities of developing new or existing processes that would lead to an increase in the marketing of herring;
2. Explore the possibilities of introducing into the diet of Asiatic and African people a product acceptable to their tastes derived from herring;
3. Investigate the dietary need for nutrients which can be supplied by the herring industry.
4. Conduct economic market research in countries of Europe and in other regions where herring is consumed but where an expansion of the consumption is believed to be possible;
5. Collect from the herring producing countries all available information on costs of fishing operation, and costs of production in processing and marketing;
6. Foster international coordination of nationally conducted economic research of the herring industry; and
7. Collaborate with existing International Organizations having an interest in this field: The ECE on Transport questions; the ICES on Biological Research.

FAO'S Annual Conference (5th Session)

Two related but apparently conflicting issues faced the annual Conference (5th Session) of FAO's 58 member governments which opened on November 21 for a two-week session in Washington--how to increase food production in some countries, and how to prevent unmarketable surpluses from appearing in other countries.

To deal with the first half of the problem, agricultural, nutrition, forestry, and fishery technicians of the world gathered in Washington's Shoreham Hotel to review FAO's plans for expanding production in the underdeveloped countries as worked out under the impetus of President Truman's "Point IV" declaration on technical assistance.

The Conference unanimously adopted the technical assistance (Point IV) program initiated through the Economic and Social Council of the United Nations in which FAO got 29 percent of the funds available to the United Nations for this purpose. Steps were taken to get underway immediately. Member nations were urged to survey their situation and develop specific plans to meet their needs, which could be put into operation as soon as funds were available.

At the same time, leading economists of member countries dealt with what is described as the "terrible paradox" which finds farmers in some lands threatened with ruin by plenty while millions in other lands are appressed by hunger and poverty.

Although some features of the International Commodity Clearing House presented at the Conference were unacceptable to most of the nations, they were unanimous, however, in their approval for ICCH objectives--international cooperation in the distribution of agricultural surpluses. Under the alternate plan worked out and adopted by the full Conference, a special 14-nation committee will be set up under the FAO Council which will:

(a) consider the needs of deficit nations,
(b) consider distribution schemes proposed by surplus nations, and
(c) study general methods of surplus disposal.

Additional matters before the Conference were:

WORLD REVIEW AND OUTLOOK: The Conference undertook the annual review of the world food situation, with particular relation to goals and long-term trends in consumption, production, foreign trade, and prices. For this purpose the FAO secretariat submitted The State of Food and Agriculture 1949, one of the basic Conference documents.

THE FAO WORK PROGRAM: The Director-General submitted a report on the Organization's work during 1949 and proposed a work program for 1950 for Conference approval. Fisheries was included as one of the phases of this program.

APPLICATIONS FOR MEMBERSHIP: Indonesia, Israel, Korea, Afghanistan, Sweden, and Spain have applied for membership and, all but Spain, were accepted, making in all 63 member nations.

FAO'S PERMANENT HEADQUARTERS: A decision as to the site of permanent headquarters was reached. Offers were received from Denmark, Italy, Switzerland, the

United Nations. However, Rome (Italy) was chosen as the site for FAO's permanent headquarters, but the move will not take place late in 1950 or even early in 1951.

TIMING OF CONFERENCE SESSIONS: A recommendation that the annual Conference be held in the spring biennially rather than annually in the fall was proposed and accepted. The next meeting will probably be called for April 1951 unless the Director General with the agreement of the Council feels the need of a meeting in 1950.

MEDITERRANEAN FISHERIES COUNCIL: The Director-General presented a report on the proposed establishment of a regional fisheries Council for the Mediterranean, and its establishment was approved.

ELECTION OF COUNCIL CHAIRMAN AND COUNCIL MEMBERS: The Conference appoints an independent Chairman of the Council to serve for one year. Under the rules the terms of six members of the Council (China, Cuba, Czechoslovakia, Netherlands, Philippine Republic, and United Kingdom) expired during the Fifth Session, and the following nations were elected to these places: Pakistan, Venezuela, Yugoslavia, Burma, Belgium, and the United Kingdom.

Several items of interest to the fishing industry were considered during the conference.

Commission II, which deals with technical subjects, has reviewed and approved the report of the Fisheries Panel.

Commission II also approved the report of the Working Party on Technical Assistance for Economic Development. This report contains some comments on the Fisheries Panel.

Commission II has further approved the report of the Working Party on Extension and Advisory Services. This report also contains a brief comment of the Fisheries Panel.

Fisheries Panel meetings were attended by representatives from:

Belgium	Egypt	Ireland	Netherlands	United States
Canada	France	Italy	Norway	Uruguay
Denmark	Indonesia	Mexico	United Kingdom	Venezuela

The Supreme Commander for the Allied Powers (SCAP)

The general functions of the Conference are to determine general policy questions, to approve budget, to make recommendations for implementation of national action, to submit conventions concerning food and agriculture (including fisheries) to member nations, to make recommendations to public international organizations, to arrange procedure for consultation with governments, national institutions, and individuals; and to discharge any other functions within the scope of the organization.

Functions of the General Mediterranean Fisheries Council[1/]

Establishment of a General Fisheries Council for the Mediterranean, with headquarters in Rome, to promote cooperative action by governments in developing the

1/See also Commercial Fisheries Review, November 1949, p. 22; October 1949, p. 29.

seas' resources will be proposed to FAO Member Governments attending the Organization's Fifth Annual Conference in Washington this month.

If approved by the Conference, the Mediterranean council will be the second fisheries council to be formed under FAO sponsorship.

In July, FAO issued invitations to governments concerned to meet in Rome in September to consider the formation of a council for the Mediterranean.

Delegates from France, Greece, Italy, Lebanon, Turkey, United Kingdom and Yugoslavia, with observers from the United States, Spain, the Holy See, and the International Council for the Exploration of the Sea, attended the meeting and drew up an agreement for the establishment of a General Fisheries Council for the Mediterranean.

The agreement consists of a Preamble and ten articles. The Preamble reads:

> The Governments of France, Greece, Italy, Lebanon, Turkey, United Kingdom, Yugoslavia, members of the Food and Agriculture Organization of the United Nations, having a mutual interest in the development and proper utilization of the resources of the Mediterranean and contiguous waters, and desiring to further the attainment of these ends through international cooperation by the establishment of a General Fisheries Council for the Mediterranean agree, as follows:

Except for Article III, the ten articles provide that each member government would be represented by one delegate with accompanying experts or advisers. The Council would elect a Chairman and two Vice-Chairmen, form committees, establish rules of procedure, and decide dates and locations of meetings. Initial meetings would be called by FAO within six months of the receipt by FAO of the fifth acceptance of the agreement, when the Council would enter into force.

Council would meet once a year, unless additional meetings were to be decided upon by the members of the Council. FAO would provide the Council secretariat. The seat of the Council would be the European Office of FAO, now in Rome.

FAO would bear the cost of the Secretariat, within the limits of its annual budget. Member governments would bear the expenses of research and development, whether undertaken by individual members of the Council or cooperatively.

Acceptance of the agreement will be open to member governments of FAO, or to non-members who have the approval of the Council and of the FAO Conference, each of the latter to assume its proportionate share in the expenses of the Secretariat.

Notifications of acceptance of the agreement will be sent to the Director-General of FAO, who will notify all governments concerned, and the Council will come into force on the date of the fifth acceptance. Member governments may withdraw from the Council after two years from the time the agreement enters into force.

Article III (Functions) provides that the Council shall have the following functions and duties:

a. To formulate all oceanographical and technical aspects of the problems of development and proper utilization of aquatic resources;

To encourage and coordinate research and the application of improved methods employed in fishery and allied industries with a view to the utilization of aquatic resources;

c. To assemble, publish or otherwise disseminate all oceanographical and technical information relating to aquatic resources;

d. To recommend to Member Governments such national and international research and development projects as may appear necessary or desirable to fill gaps in such knowledge;

e. To undertake, where appropriate, cooperative research and development projects directed to this end;

f. To propose, and where necessary to adopt, measures to bring about the standardization of scientific equipment, techniques and nomenclature;

g. To make comparative studies of the fishery legislation of different countries with a view to making recommendations to its Member Governments respecting the greatest possible coordination in the interests of fuller utilization of the resources of the sea.

h. To encourage research into the hygiene and prevention of the diseases peculiar to the calling of fishermen.

i. To extend its good offices in assisting Member Governments to secure essential materials and equipments;

j. To report upon such questions relating to all oceanographical and technical problems as may be recommended to it by Member Governments or by the Food and Agriculture Organization of the United Nations and, if it thinks proper to do so, by other international, national or private organizations, with related interests;

k. To report annually upon its activities to Member Governments and to the Conference of the Food and Agriculture Organization of the United Nations; and to make such other reports to the Food and Agriculture Organization of the United Nations on matters falling within the competence of the Council as may seem to it necessary and desirable.

National Fisheries Trends, October-December 1949[1/]

Production, Freezings and Canned Pack: Commercial fishing activity and, consequently, the commercial freezing of fish will decline seasonally as winter approaches. October 1 cold storage stocks of frozen fishery products for human consumption in continental United States were 128.9 million pounds, 6 percent above a year earlier. Output of canned salmon (particularly pink salmon) and pilchards in 1949 will exceed last year's production. The Maine sardine pack will be about the same as in 1948. Canned tuna output probably will be slightly lower than the record 1948 pack.

Consumption: Civilian consumption of fishery products during the remainder of 1949 was expected to be at about the same rate as in the latter part of 1948 with supplies (especially of canned fish) somewhat larger than a year earlier.

Prices: Retail prices of fresh and frozen fish probably will increase seasonally, while declines from recent levels are anticipated for canned fish. As compared with the same months of 1948, retail prices of fishery products were expected to be lower during the latter part of 1949.

Foreign Trade: Imports of fresh and frozen groundfish and rosefish fillets this fall were not expected to vary much from the quantity received from abroad in late 1948.

Exports of fishery products during the remainder of 1949 may not be as high as a year ago.

1/ Prepared by the Bureau of Agricultural Economics, Department of Agriculture, in cooperation with the Fish and Wildlife Service.

Outlook for 1950: Supplies of fishery products are expected to be plentiful during 1950. Civilian demand for fish is likely to continue strong throughout most of the year, although somewhat weaker than in 1949.

Retail prices of fish in 1950 are expected to average below the 1949 level, especially if market supplies of livestock products increase as is currently anticipated.

Imports of fish in 1950, especially frozen groundfish and rosefish fillets, are likely to be somewhat larger than in 1949. The devaluation of foreign currency in terms of American dollars makes it more advantageous than in recent years for foreign producing areas to sell fish in the United States.

Pacific Marine Fisheries Commission Meets

The Pacific Marine Fisheries Commission met on September 7 and 8, 1949, at San Francisco, California. It discussed the troll salmon, albacore, pilchard, otter trawl, and soupfin shark fisheries; the proposed amended International Halibut Treaty; and the fisheries legislation enacted by the member States of the Commission. California, Oregon, Washington, Alaska, the United States Government, and Canada were represented at the meeting.

TROLL SALMON FISHERY: The West Coast States, Alaska and Canada reported on the number of salmon tagged; also Oregon and Washington on the number marked in state hatcheries, and Washington and Canada on the returns received from tagged fish.

Washington advised that regulations pertaining to the troll salmon fishery as recommended by the Commission were adopted by the State except that the 22-inch size limit on silver salmon was continued.

Oregon informed the meeting that it was continuing to sample troll salmon landings in order to study seasonal variations and sizes, and was making some preliminary studies on age determination of salmon. In addition, several regulations have been adopted by the Oregon Fish Commission affecting the salmon fisheries on coastal streams and providing for quotas on silver salmon; and on the Columbia River there has been a 30-hour closed period during the fall season and a shortening of the season by 15 days at the end.

California told the meeting that it has inaugurated a separation of salmon species in the records maintained by the industry and submitted to the California Division of Fish and Game but the results have not been very encouraging to date because there is no price differential for the various salmon species and no incentive for the California fishermen to keep the records by individual species; and that experiments have been conducted on mortality of salmon by use of certain types of gear. In addition, the new California law to close the salmon season September 30, which becomes effective next year, could not be put into effect this year because the State Department has not been delegated authority to enact regulations pertaining to the commercial fisheries like Oregon and Washington.

Canada announced that studies are being made on size limits and the percentages of salmon taken of various sizes.

A motion was made and carried that the Salmon Committee of the Commission "be instructed to make a thorough survey of the sport salmon fishery and regulations and laws pertaining to this fishery in the Pacific states, the territory of Alaska and coastal waters of Canada, the findings of such survey and recommendations to be submitted to the Commission at its next meeting."

In accordance with a motion unanimously passed on September 7, the Salmon Committee also was instructed to meet and submit the following day to the Commission recommendations for coordinating the salmon marking program. The report of this Committee was unanimously approved by the Commission with a suggested amendment to include the landings of the other offshore salmon fisheries. The members of the Salmon Committee were instructed to conduct the program. The Committee's recommendations and program were as follows:

"The Salmon Committee of Pacific Marine Fisheries Commission met and discussed the marking and tagging of chinook and silver salmon. The emphasis of the meeting was on marking. The following conclusions were reached:

"1. The Pacific Marine Fisheries Commission should take over the assignment of salmon marks to all agencies on the Pacific Coast wishing to do such work. The assigning is now being done by the Canadians who would be glad to turn the job over to us. We recommend that this be done now.

"2. Collection of marks and tags is now being done by the individual states. This should be continued.

"3. Compilation, tabulation and analyses of tag and mark data from the troll fishery should be done by the individual states; this summarized data should then be turned over to the Pacific Marine Fisheries Commission for a final summary and for re-distribution.

"We recommend the adoption of such a system.

"4. A great deal can be learned about the source of our troll fish by a large scale marking experiment which would include marking of young chinooks and silvers in streams of California, Oregon and Washington, and preferably in Canada and Alaska as well.

a. This problem would require the marking of a total of at least 500,000 to 1,000,000 fingerling chinooks and the same number of silvers in about ten different areas along the Pacific Coast.

b. The work should be repeated in two or three different seasons, preferably consecutive.

c. While a problem of this magnitude was being carried out, it would require the use of all or nearly all the desirable marks for both silvers and chinooks. Some small scale hatchery experiments would either have to take the less desirable marks during this period or postpone their experiments until the work was over.

d. Collection of marks should be done by quantitative sampling of the commercial catch rather than by paying rewards. This is because if a known fraction of the catch is carefully examined for marks, it is then possible to calculate the number of marks in the entire catch, but if collection is done by offering rewards, there is no way of knowing how many were missed.

e. A large-scale marking experiment of the type described above should be started as soon as all the member states can be sure that they are ready and able to carry it through, but the matter should not be rushed to such an extent that any organization starts before it is properly prepared.

This committee recommends that it or some similar committee be authorized to meet and draw up plans for a coastwise marking and recovery experiment which should include Canada and Alaska if possible. This will require at least one and probably two interstate trips for part of the members, and for other representatives participating in the troll program.

ALBACORE FISHERY: Washington advised that very little research had been done by them except recording catch statistics, and noting the area and time albacore were taken.

Oregon informed the Committee that they continued the gathering of data on the albacore; made racial measurements and counts of fish brought into the port

of Astoria, and plan to make comparisons with racial data as gathered in Japan and Hawaii; and have also continued length-frequency sampling.

California advised that they have continued length-frequency studies to determine the size and weight of the catch; experiments were conducted on the use of gill nets; population studies made were unsuccessful since no information was available from Hawaii; and a study of the species taken off California waters and from other waters near Japan and Hawaii is also being undertaken.

Canada stated that an observer was placed on the Canadian Fisheries patrol boat off the West Coast and analyses of catches made; and that a new method of tagging by use of a small celluloid tag attached to a barbless hook was undertaken.

Alaska reported that attempts have been made to conduct a survey off Alaska but the work was difficult in that the source of information is dependent upon radio communication, but that large tuna in small numbers were taken 300 miles off the coast of Sitka.

PILCHARD FISHERY: California, reporting for the group of agencies participating in sardine research on the West Coast, submitted a report on the sardine fishery and on the meeting held in Vancouver in June 1949 on this fishery. The report contained catch figures during the 1948 season; shore studies, including detailed records of individual boat catches, sizes of fish, age composition of fish; and study of physical and biological conditions in the ocean to determine the effect of such conditions on the sardine population specifically and on all marine fish in general.

It was reported that those in attendance at the Vancouver meeting felt that there were no immediate prospects for a good sardine fishery in the Pacific Northwest, and that from studies made in California, conditions during the coming season should be somewhat better with the fishery concentrating on the 1947 and 1946 broods. For a long-range forecast, good spawn survival over a period of years should be followed by good fishing; however, high and low levels of abundance and a much less stable fishery can be expected.

Washington and Oregon advised that no pilchards were landed in their states this year.

Canada reported that they are not conducting studies of the pilchard at present because there are no fish in Canadian waters.

OTTER TRAWL FISHERY: The Commission was advised that various suggestions have been submitted by the industry as to a possible regulation of the trawl fishery. The various representatives present reported on the otter trawl fishery research being conducted. No definite commitments were made on this fishery.

SOUPFIN SHARK FISHERY: Washington reported that the present catch exceeds that of the last few years, and the tagging program is being continued.

Oregon advised that considerable effort has been made to gather information on this fishery and that regulations recommended by the Commission have not been enacted as yet; and that investigations are continuing.

No definite commitments were made on this fishery.

PROPOSED AMENDED INTERNATIONAL HALIBUT TREATY: The proposed revision of the Halibut Treaty, in particular, to include the sablefish as being under regulation by the International Halibut Commission was discussed. A motion was unanimously passed "that a study of the sablefish population be conducted to determine if it is a local, interstate or international problem and what, if any, cooperative or joint action either by the several states, Canada and Alaska is necessary to protect or further conserve the sablefish; such study to be conducted by the member states of this Commission, and the Dominion of Canada, Territory of Alaska and International Halibut Commission be invited to participate in these studies if they so desire; and pending completion of this study treaty negotiations with respect to the sablefish, be suspended until the receipt of such reports and further action by this Commission."

PORT PROVILEGES TO FISHING VESSELS IN ALASKA AND BRITISH COLUMBIA: With reference to the proposed draft on Convention for Extension of Port Privileges to Fishing Vessels in Alaska and British Columbia, a motion was unanimously passed, "that Restricted Draft, dated June 22, 1949, 'Convention for the Extention of Port Privileges to Fishing Vessels in Alaska and British Columbia' be approved in substance."

GENERAL ACTION: The Commission unanimously passed a motion "that this Commission through its Chairman, extend standing invitations to the directors of the governmental agencies handling fisheries matters of the Dominion of Canada, Republic of Mexico, and the Territories of Alaska and Hawaii to attend and participate in the discussions of the meetings of the Pacific Marine Fisheries Commission."

Pacific Oceanic Fishery Investigations

HAWAIIAN TUNA FISHERY: Tuna fishing generally was slow in the Hawaiian Islands during September, according to a report from the Section of Biology and Oceanography of the Service's Pacific Oceanic Fishery Investigations. The flagline catches averaged daily one fish per hundred hooks, a figure considerably below the average for the early part of the season. The yellowfin tuna, generally preponderant during September, were almost absent from the catch.

The skipjack season in this area is drawing to a close. By the end of September, landings were sufficient to allow only a limited amount of canning. In general, the season is not believed to have been up to average. While steady catches were made during the summer, the good fishing prevailing in previous years was not encountered.

Long-line catches were markedly better in October than they had been for months, and were composed almost entirely of big-eyed tuna, black marlin, and striped marlin. The average of over 3 tunas per 100 hooks daily off Hana, Maui, represents almost a 100 percent improvement.

Bait continues to be a problem. Fishermen have been paying 35 to 50 cents a pound for the opelu which is used as long-line bait. The largest big-eyed tuna (332 pounds) seen to date was encountered in October.

All tuna gonads (i. e., yellowfin and big-eyed tuna) from fish landed at Honolulu during October have been found to be spent and in process of recovery,

according to a report from the Pacific Oceanic Fishery Investigations. A female albacore, which it was possible to examine, was spent also. The ovaries were recovering, but eggs in process or reabsorption could be seen as well as a few translucent, misshapen ova which had been neither shed or absorbed.

"HUGH M. SMITH" TO BEGIN OPERATIONS IN DECEMBER: The Hugh M. Smith, the second of three fishery research and exploratory fishing vessels to be completed for the Service's Pacific Oceanic Fishery Investigations, sailed from Seattle on November 15 for Honolulu. A former Navy vessel of the YP class, the vessel is designed for use as a biological and oceanographical research vessel, and will be used to study the life histories and habits of the various tunas of the central Pacific Ocean.

The Hugh M. Smith was converted at Tacoma, Washington. The scientific equipment includes laboratory facilities, winches for use in oceanographic studies of plankton and water temperature, tanks for bait-holding experiments, and refrigerated holds; an auxiliary propulsion motor for traveling at the low speeds required for much of the work is included also.

The vessel's fishing gear will include a long bait net (80 fathoms long by 6 fathoms deep), a medium-size net (40 fathoms long by 3 fathoms deep), and a short net (15 fathoms long by 1 fathom deep): and a lift net for night bait fishing.

Operation of this vessel is scheduled to begin in December.

"HENRY O'MALLEY" ARRIVED AT HONOLULU: The exploratory fishing vessel Henry O'Malley arrived at Honolulu on October 20. Making of bait nets and accessory equipment for live-bait fishing and preparing the vessel for sea are now in progress. This vessel will be fitted for bait fishing and deep trolling.

STATUS OF VESSELS: The exploratory fishing vessel, Henry O'Malley, arrived at Honolulu on October 20. Making of bait nets and accessory equipment for live-bait fishing are now in progress. This vessel will be fitted for bait fishing and deep trolling.

Sardine Film Takes Honors in International Exhibition

It's the Maine Sardine (a Fish and Wildlife Service film) took first prize in the public relations series at the 10th International Exhibition of Cinematographic Art in Venice, Italy, according to a cable received on October 19 from the United States Embassy at Rome.

The film was produced by the Service for the Maine Department of Sea and Shore Fisheries and the Maine Sardine Packers Association. The picture shows the catching of sardines off the Maine coast and the methods of packing used in local canneries. Intended for general showing to schools, clubs and organizations, It's the Maine Sardine is a 16 mm. sound and color film which runs about 18 minutes.

THE FACE OF THE MEDAL PRESENTED TO THE SERVICE FOR THE PRIZE-WINNING FILM, IT'S THE MAINE SARDINE.

FISH AND WILDLIFE SERVICE DIRECTOR, ALBERT M. DAY (CENTER), ACCEPTING A MEDAL AND DIPLOMA FROM COUNSELOR MARIO LUCIOLLI OF THE EMBASSY OF ITALY (LEFT) FOR THE SERVICE'S PRIZE-WINNING FILM, IT'S THE MAINE SARDINE, IN THE CONFERENCE ROOM OF THE U.S. DEPARTMENT OF STATE ON NOVEMBER 21, 1949. THE DEPUTY ASSISTANT SECRETARY OF STATE FOR PUBLIC AFFAIRS, HOWLAND H. SARGEANT (RIGHT, SEATED) PRESIDED AT THE CEREMONY.

The picture was one of several United States films selected by a joint committee of officers designated by the heads of motion-picture producing agencies of the Government, and was chosen for the competion for "its excellence in continuity and color and its general effectiveness in presentation." Entered in the Venice film festival (one of the world's most outstanding exhibitions of cinematographic art), the film was in competition with educational motion pictures exhibited by more than 40 nations.

Texas Monthly Fishery Bulletin Issued

Texas Landings, a new fishery bulletin, is the first of a series of monthly reports by the Fish and Wildlife Service and the Texas Game, Fish and Oyster Commission on the landings of fishery products in Texas.

This bulletin reports on the inside (bay) waters and the offshore (Gulf of Mexico) commercial catch of fishery products by species, gear, area; total catch by species and area of capture; summary data on landings for each month and cumulative totals for the current Texas fiscal year (September 1 to August 31); and comparative data.

Collection and publication of these monthly statistics will provide the fishing and allied industries with data on the Texas fisheries many months earlier than they have been available in the past.

Other states for which monthly bulletins are issued by the Service are Massachusetts and Maine.

To receive copies of Texas Landings, or to be placed on the mailing list, requests should be addressed to the Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Washington 25, D. C. In Texas, the distribution of the new bulletin is being handled by the Texas Game, Fish and Oyster Commission, Austin, Texas.

WHOLESALE AND RETAIL PRICES

Average primary wholesale prices for all foods on October 11 this year were 1.6 percent below September 13 and 9.5 percent below October 12, 1948, according to the Bureau of Labor Statistics of the Department of Labor.

Canned red salmon wholesale prices during October 1949 were at the same level as in September, but were 7.4 percent lower than in October 1948. Prices for canned pink salmon in October continued to drop and were 7.3 percent lower than in September and 33.3 percent lower than in October last year.

Wholesale and Retail Prices

Item	Unit		Percentage change from--	
Wholesale: (1926 = 100)		Oct.11,1949	Sept.13,1949	Oct.12,1948
All commodities	Index No.	152.1	- 1.6	- 7.8
Foods	do	160.0	- 3.2	- 9.5
Fish:		Oct.1949	Sept.1949	Oct.1948
Canned salmon, Seattle:				
Pink, No. 1, Tall	$ per doz. cans	3.94	- 7.3	-33.3
Red, No. 1, Tall	do	6.156	0	- 7.4
Cod, cured, large shore, Gloucester, Mass.	$ per 100 lbs.	15.50	0	+ 3.3
Retail: (1935-39 = 100)		Oct.15,1949	Sept.15,1949	Oct.15,1948
All foods	Index No.	200.6	- 1.8	- 5.2
Fish:				
Fresh, frozen and canned	do	306.8	- 1.6	- 5.9
Fresh and frozen	do	268.4	+ 3.2	- 1.7
Canned salmon:				
Pink	¢ per lb. can	50.5	-10.1	-15.0

The drop of 1.8 percent in retail food prices between September 15 and October 15 this year, more than the usual seasonal decrease, was the largest monthly change in the retail prices since February 1949. On October 15, the retail food index was 1.8 percent below the previous month and 5.2 percent below mid-October 1948. Chiefly responsible for the decline from September to October was a decrease of 3.5 percent in the prices of meat, poultry and fish.

The fresh, frozen and canned retail fish index was 1.6 percent lower than in mid-September and 5.9 percent below mid-October 1948, reflecting mainly the lower prices for canned fish which prevailed during the month. Canned pink salmon retail prices showed a substantial decline, reflecting the decrease in wholesale

prices which started in September. As is usual at this time of the year, due to lighter production, the fresh and frozen fish index increased 3.2 percent as compared with mid-September, but was still 1.7 percent below October 15, 1948.

FISH REDUCTION PROCESSES

Reduction of fish and fish waste to fish meal and fish oil has been the basis for commercial operations along our seacoasts for many years. Methods employed have changed with the gradual improvements in equipment available for adaptation to the peculiar needs of the operators and with the background of practical experience that only actual plant operation can develop. The fish processors' control over raw materials harvested from the sea is very limited even as to quantity and quality. Localized adaptations of plant equipment and day-to-day changes in technique of operations by plant crews have been the original designs of factory installations.

Fish reduction procedure depends upon (1) volume of raw material, (2) percentage of oil it contains, (3) peculiarities of the raw material, (4) quality of oil and meal produced, and (5) extent of investment. There are two general types of processes in use for fish reduction: wet reduction and dry rendering.

Each method of reduction has its place. Dry rendering is more costly to install for the same capacity, it yields an inferior quality of oil, and the operation expense may be higher. The water-soluble materials are retained in the meal, however, and the meal yield per ton of raw material is appreciably larger. The wet-reduction equipment enables the processor to handle a large volume of material continuously, the initial expense and the operating expense are less, and a good quality oil may be obtained. The meal does not contain water-soluble materials, so the yield is lower.

--Fishery Leaflet 126

Angola (Portuguese West Africa)

FISHING INDUSTRY, 1948: Production: Angola's fisheries reported increased yields during 1948, as compared with the preceding year, permitting a larger exportable surplus, according to a July 25 report from the American Consulate at Luanda.

Exports: The colony's exports of its principal fishery products in 1948 have increased considerably. The largest increases were in fish meal and dried fish (See table).

Angola's Exports of Principal Fishery Products, 1944-48

Commodity	Quantity (in pounds)					Value (in U. S. Dollars)				
	1948	1947	1946	1945	1944	1948	1947	1946	1945	1944
Fish:										
Fresh	367,292	330,381	449,915	544,852	390,621	29,234	23,661	23,850	31,583	21,493
Dried	30,430,400	17,842,904	22,384,927	23,145,362	22,497,504	2,096,890	1,183,695	1,239,489	1,084,331	1,009,307
Canned	3,823,600	2,862,671	5,149,813	3,212,618	1,744,895	897,880	519,952	985,048	638,285	374,296
Total Fish	34,621,292	21,035,955	27,984,655	26,902,832	24,633,020	3,024,004	1,727,308	2,248,387	1,754,199	1,405,096
Byproducts:										
Fish Meal	31,242,200	14,684,696	16,342,988	14,415,883	20,672,784	1,617,202	550,824	307,491	237,699	320,654
Grand Total of Principal Fishery Products	65,863,492	35,720,652	44,327,643	41,318,715	45,305,804	4,641,206	2,278,132	2,555,878	1,991,898	1,725,750

NOTE: Values converted on the basis of 24.765 angolares equal $1.00 U.S.

Australia

ELECTRIC LAMP USED TO SEINE PILCHARDS: A group of Australian fishermen from Port Phillip Bay, Victoria, are using a powerful light at night fishing for pilchards, according to the August 1949 Fisheries Newsletter of the Commonwealth Director of Fisheries.

The method is to attract the fish around a powerful light at night, and then encircle them with a large net of the purse-seine or lampara type. It is effective only when there is not much moon.

Boat equipment consists of a 32-ft. vessel of 21 hp., which tows two dinghies to a likely fishing area. A wooden stand with two 1000-candle-power electric lamps and reflector is then assembled and put into one dinghy, which has anchored some distance from the other boats. One man stays in it to watch for signs of fish. Electricity is provided by a generator which is belt-driven from the engine of the large boat through a cable which is buoyed to float on the water. Meanwhile, the net is made ready for shooting in the other dinghy. After an hour or two, fish may be observed densely congregated around the lights. The watcher, when he thinks there are reasonable prospects of a good catch, signals the second dinghy. The latter is then quietly rowed around the school encircling the fish with the net.

The net is a small purse-seine of 1/2-inch mesh webbing, 110 fathoms long and 17 fathoms deep. Because pursing has to be done by hand with only four men, it is lightly leaded for a purse seine. When the lights are used, the fish are so attracted that they ignore or do not realize their danger until too late. The darkness also conceals the other boats. The net is pursed and hauled entirely from the dinghy. When pursing is complete, the "light boat" is rowed out of the circle of netting.

This type of fishing was begun at the end of April this year and is being continued. There have been no failures and the average haul has been about one ton of fish, with the largest catch over two tons. Pilchards and anchovies have both been taken, sometimes together, but usually separate. Various sizes of pilchards have been obtained, the average length being about six inches over-all.

It has been known for some time that pilchards and anchovies are in Port Phillip Bay at all times of the year, but the pilchards seem to go down deep in winter. It is hoped that it will be possible to lure them to the surface with the lights and continue operations all the year round.

These same fishermen were fishing for anchovies in Port Phillip for several years. Since there are only limited sales for anchovies and believing that canneries might be more interested in larger fish, like pilchards, this group of fishermen decided to fish for pilchards. After trying meshing nets with very unencouraging results, they decided to try to attract the fish with a light. They believe that this technique could probably be developed much further.

Although one canner in Western Australia is already packing pilchards, there is still no real demand for pilchards from Victorian or interstate fish canneries; however, it is hoped that the canners will soon utilize these fish.

Bahama Islands (British West Indies)

SPONGE FISHING PROHIBITED INDEFINITELY: On September 30 the Colonial Government issued an order which prohibits entirely the taking of sponges throughout the Colony until further notice, according to an October 5 report from the American Consulate at Nassau. This step is considered essential to the interests of the industry and the Government. (See Commercial Fisheries Review, July 1949, page 34.)

Canada

British Columbia Whaling Catch and Byproducts, May through mid-September 1949

Species	Number	Products	Quantity
Sperm	69	Meal	1,806,500 lbs.
Humpback	70	Bone meal	29,500 "
Finback	106	Whale oil	269,000 gallons
Sei	3	Sperm oil	120,000 "
Blue	2		
Total	250		

BRITISH COLUMBIA WHALING OPERATIONS, 1949: The British Columbia whaling station captured 250 whales this season (May through mid-September 1949), compared with 182 a year ago (See table). The company operating the station used three

whaling vessels, according to an October 14 report from the American Consulate General at Vancouver.

Most of the meal was sold in the United States where it is used as cattle food. Prices are reported to have been approximately $150 per ton.

Prices for whale oil ranged between six and ten cents per pound and practically the entire production was sold in the domestic market to two principal soap producers.

No ambergris was obtained from the whaling operations. The whale meat was processed with cereals and the finished canned product sold as a pet food.

* * * * *

CONSUMPTION OF FISHERY PRODUCTS (EDIBLE WEIGHT), 1948: Introduction: The per capita consumption of fish in Canada during 1948 amounted to 12.2 pounds, on an "edible weight" basis, an increase of 3/4 of a pound per person over the figure for the previous year (see Table 1), according to the September 1949 Canadian Fisheries Department Trade News. This advance coincides with that registered in the United States for the same period. In Canada the increase of fish consumption in 1948 affected chiefly the canned products. Because of constricting outlets in export markets, producers of canned fish promoted sales on the domestic market. An increase in the domestic supply of fresh and frozen fish, on the other hand, was retarded by the diversion of a larger share of the groundfish catch, particularly, from the fresh and frozen form to the production of salted products for export, and by larger exports of fresh and frozen salmon. Thus the Canadian picture is slightly different from that of the United States where the increase in fish consumption was attributed to "the greater availability and consumer acceptance of frozen products in the Middle Western cities as well as the increased availability of canned fish".

Table 1 - Canadian Per Capita Consumption of Fishery Products (Edible Weight), 1945-48

Marketed Forms	1948 1/	1947	1946	1945
	lbs.	lbs.	lbs.	lbs.
Fresh and Frozen:				
Sea fish, rnd. or drsd.	2.4	2.8	3.0	3.2
Sea fish, filleted	2.0	1.7	2.7	2.0
Fresh-water fish	0.7	0.7	0.8	1.0
Shellfish	0.3	0.2	0.3	0.3
Total	5.4	5.4	6.8	6.5
Cured:				
Smoked	0.8	0.7	0.7	0.7
Pickled (in brine)	0.4	0.4	0.5	0.5
Salted and dried	0.8	0.8	0.8	0.5
Total	2.0	1.9	2.0	1.7
Canned	4.8	4.2	3.1	1.7
Grand Total	12.2	11.5	11.9	9.9

1/Preliminary figures.

Canned Fish: The consumption of canned fish in Canada increased from 4.2 pounds in 1947 to 4.8 pounds per capita in 1948 due mainly to an increase in the consumption of canned sardines. More canned salmon also was consumed. The 1948 figure for all canned fish surpassed that of 1939 by 1/2 pound per person.

Fresh and Frozen Fish: The consumption of fresh and frozen fish, at 5.4 pounds per capita in 1948, was the same as in 1947. More fresh and frozen cod, haddock and flatfish was consumed in 1948, but a substantial decrease occurred in the consumption of fresh and frozen salmon. The per capita consumption of fresh and frozen products in the last two years has been substantially lower than in 1945 and 1946. It appears that the large availability of canned fish

during the last two years has brought about some shifting in Canadian fish consumption from the fresh and frozen form to the canned product.

Cured Fish: The consumption of cured fish was 2 pounds per person in 1948, which was about the same as in previous years.

Comparison With Other Protein Foods: Although the consumption of fish has increased in 1948, it is still low in comparison with the per capita consumption of other animal proteins (see Table 2). The increased consumption of fish, however, is probably related to the drop in the consumption of meat and poultry last year. The high prices for meat and poultry in Canada during 1948 may have induced consumers to purchase more fish. However, the increase in the consumption of fish was far from being equivalent to the drop in that of meat and poultry.

Table 2 - Canadian Per Capita Consumption of Meat, Poultry, Eggs, and Fish

Commodity	1948	1947	1946	1945	Prewar (1935-39) Average
	lbs.	lbs.	lbs.	lbs.	lbs.
Fish (edible wt.)	12.2	11.5	11.9	9.9	11.9
Meat (carcass wt., generally)	135.3	146.0	145.5	141.7	118.4
Poultry (dressed wt.)	19.1	24.8	21.8	25.9	18.4
Eggs (fresh egg equivalent) .	35.1	36.1	33.2	33.7	30.7

Consumption by Species: SALMON: About 51 million pounds of salmon were consumed in 1948, accounting for almost a third of the total quantity of fish consumed in the country. The consumption of canned salmon amounted to 38.8 million pounds, or slightly more than 800,000 cases (48: 1 lb). This exceeded the previous year's figure. Canned salmon alone accounted for almost 25 per cent of all fish going into the Canadian diet. The quantity of fresh and frozen salmon consumed in Canada was 11.8 million pounds in 1948—3.1 million pounds less than in 1947. The drop was due to reduced production in this form last year and to somewhat larger exports.

COD: This species contributed 32.7 million pounds to the Canadian consumption of fish in 1948, 1 million pounds higher than in the previous year, and amounted to 20.9 percent of the total fish consumption. More cod was marketed as fresh or frozen, dressed and filleted than in 1947. Exports of these products were also substantially higher but the retention of cod fillets in Canada (12 million pounds) showed an increase of 600,000 pounds over 1947. The production of salted cod in 1949 (44.3 million pounds, dried weight) was considerably higher than in the previous year. As usual the bulk of the salted product was exported but the retention on the domestic market reached 10.4 million pounds, (9.9 million pounds in 1947). The smoked cod consumed amounted to 6.6 million, which was about the same as in the previous year.

HADDOCK: The catch of haddock was high in 1948. Notwithstanding higher exports, this increased production contributed to a rise in domestic consumption, which reached 9.6 million pounds last year as compared with 6.4 million pounds in 1947. Consumption of fresh and frozen fillets of haddock amounted to 7.2 million pounds, 2.6 million pounds more than in the previous year. More than half a million pounds of smoked haddock were consumed domestically in 1948, nearly twice the 1947 figure.

HERRING: The quantity of canned herring and sardines retained for domestic consumption in 1948 amounted to 15 million pounds as compared with 10.6 million pounds in the previous year. The major increase occurred in the consumption of

canned sardines of which there was a heavy pack in 1948. With reduced export outlets, more than 50 percent of a total production in the vicinity of 850,000 cases (100:3-1/2 oz.), was disposed of on the domestic market. Nearly 65 percent of the canned herring consumed in Canada was derived from the sardine pack. About 2.9 million pounds of fresh and frozen herring and 4.0 million pounds of pickled herring of various types were also consumed in Canada in 1948. These quantities are about equal to those for the previous year.

HALIBUT AND OTHER FLATFISH: In 1948, 5.2 million pounds of halibut were disposed of on the domestic market, i.e., 1.2 million pounds more than in 1947. A substantial increase in the production of fillets of sole, plaice, etc., occurred last year. Even with exports at a higher level, almost 2 million pounds of these other flatfish were retained on the domestic market, as compared with 1.5 million pounds in 1947.

LOBSTER AND SHELLFISH: Only 18 percent of the fresh lobster and 26 percent of the canned product was retained for domestic consumption. Increased production of these products in 1948 is reflected in higher exports for that year. The quantity of fresh lobster actually consumed in Canada was about 1.1 million pounds; canned lobster about 0.7 million pounds. In addition, some 2.5 million pounds of other fresh shellfish were consumed—0.7 million pounds more than in the previous year.

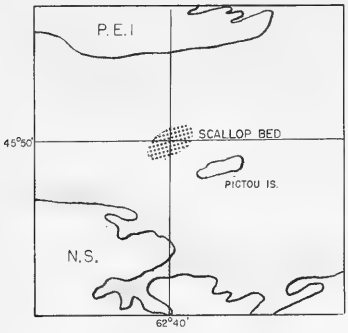
OTHER SEA FISH: The consumption of other sea fish amounted to 20 million pounds in 1948, as compared with 16.6 million pounds in 1947. The Pacific coast species—lingcod, graycod, sablefish and the rockfishes—provided 2.8 million pounds of fresh and frozen products and 1.2 million pounds of smoked products for Canadian consumers. This was some 1.7 million pounds greater than for the previous year when the lingcod and sablefish fisheries experienced a very poor yield. A total of 6.5 million pounds of fresh and frozen smelts, swordfish, mackerel, catfish and rosefish was retained on the domestic market in 1948—1.7 million pounds less than in the previous year.

The consumption of canned fish and shellfish--other than the salmon, lobster, herring and sardines mentioned--reached 6.7 million pounds in 1948, an increase of 3.1 million pounds over the 1947 figure.

FRESH-WATER FISH: The consumption of fresh-water fish in 1948 is estimated at 9.0 million pounds which is very close to that of the previous year. The main species consumed are, in order of importance, whitefish, pickerel, pike, lake trout, and ciscoes.

NEW SCALLOP BED IN NORTHUMBERLAND STRAIT: Further information on the new scallop bed near Pictou Island in Northumberland Strait (between Prince Edward Island and Nova Scotia) has now been released by the Fisheries Research Board of Canada, according to the September 1949 issue of the Trade News. This bed may be described as elliptical in contour with the long axis, or the length of the bed itself, running north-east and south-west. The heaviest concentration of scallops, according to findings of the Fisheries Research Board investigators, is at the western end of the bed. From the exploratory hauls made, it is expected that from two to six bushels will be brought up in a 15-minute drag.

NOTE: See Commercial Fisheries Review, October 1948, pp. 37-39, for 1947 detailed data.



STIPPLED AREA INDICATES LOCATION OF NEW SCALLOP BED.

The discovery was made by the Della May, a Digby scallop dragger presently under charter to the Board for exploration of scallop resources of the southern Gulf of St. Lawrence.

At the same time, legislation has been put into effect, allowing scallop fishermen in that region to take scallops less than the four-inch minimum size limit which is in effect in the other scallop areas. In view of the fact that a considerable proportion of the scallops are just below the four-inch size and also that the fishery in the Gulf is not intensive and heavy natural mortalities are frequent, the size limit was withdrawn.

* * * * *

DIGBY SCALLOP PRODUCTION DECLINES: The Canadian production of scallops from the beds in the Bay of Fundy area off Digby, Nova Scotia, has been declining rapidly in recent years, according to an October 28 report from the American Consulate General at Halifax.

As many as 100 draggers used to operate out of Digby; and as recently as 1936, 15 vessels were based in the port of Centreville, where so far this year one dragger has been fitted out. Only 20 boats were fitted out during the 1948-49 season, and the Canadian Fisheries Board conducted an intensive survey in an attempt to assess the industry's prospects. On October 1 of this year (the opening date of the local 1949-50 scallop season) 14 draggers had been licensed to operate out of Digby and Annapolis counties--the lowest number of vessels to be licensed since the early days of the industry.

The principal scallop grounds fished are located on Quero Bank. Scallops in the area have been dwindling in numbers and size to the extent that profitable beds are found each year at progressively greater distances from the base ports.

However, an unexploited source of scallops has been discovered by the Canadian Fisheries Board during its exploration of scallop resources in the southern Gulf of St. Lawrence which may offset this decline.

* * * * *

EFFECT OF DEVALUATION ON BRITISH COLUMBIA FISHERIES: The devaluation of the Canadian dollar and the English pound on September 20, 1949, will materially affect the external trade of British Columbia, and in some instances domestic trade as well. While it is too early to forecast with accuracy the net results of the devaluation, most business men and Government officials believe that business in British Columbia in general should benefit slightly, according to an October 7 report from the American Consulate General at Vancouver. While the premium on American funds will assist exporters of fish oil and meal, which are marketed chiefly in the United States, exports of canned salmon which are shipped for the most part to countries within the sterling bloc are expected to decline. The United States may expect greater imports of British Columbia lumber, fish, fish oil and meal and a reduction in its exports of manufactured articles and an increase in its exports of fruit and produce to the Canadian market.

Dominican Republic

PROGRESS OF EXPERIMENTAL FISHING:[1/] Experimental fishing in Dominican waters by a commercial fishing company financed by United States private capital produced results which appear to be encouraging, according to an October 26 consular report from Ciudad Trujillo. Organized last May as a Dominican corporation, it has been operating chiefly in Samana Bay, where prospects for the eventual development of commercial fishing were reported to be particularly good; also operated in the vicinity of Saona Island, off the southeast end of Hispaniola during recent weeks.

Company plans to move its operations to the South Coast to carry on experimental fishing, with Ciudad Trujillo as a base. One of the company's vessels (a 72-ton motor-powered fishing vessel) is expected to arrive shortly from Miami, where it has been sent for outfitting and repairs. It will carry a number of small inboard motor boats.

In the Samana Bay area, a variety of equipment and experimental methods were used which probably had never been used before in Dominican waters. Fishing reportedly was chiefly for scale fish. Satisfied that there is an abundance of spiny lobsters and shrimp, the company feels that if marine fin fisheries fail to meet expectations, operations can be concentrated on lobster and shrimp.

In the areas fished thus far, apparently the sea bottom will make it difficult to use heavy trawls. According to one member of the group, experiments indicate that the company may find it desirable to turn to lighter equipment. Company's fishermen have been using seines chiefly in their experimental fishing for scale fish in the Samana Bay area. No attempts thus far have been made to market or to develop methods of storing and distributing the catch commercially. If commercial operations are undertaken, the use of cold storage is contemplated, but there seems to be some interest also in examining possibilities of salting the catch.

One feature of the company's operations consists of extending financial assistance to Dominican fishermen, supplying them with equipment, and using the information gathered this way in connection with the sampling techniques which the company is using.

Recently, the Dominican government has shown special interest in assisting the company in its activities. It is understood that official assurance has been received by the company that it can use its United States-registered fishing vessels in the various ports of the Republic without the restrictions which would ordinarily apply in the case of foreign-flag vessels.

German Federal Republic

FISH LEATHER PRODUCTION STOPS: By mid-1949 the tanning of fish skins in Germany ceased almost completely due to the lack of consumer interest in articles made of fish skin, according to an October 19 report from the American Consulate at Bremerhaven. Increased imports of hides and skins have stopped the fish leather industry begun during the 1930's. In Bremerhaven, fish leather began to be produced on a large scale in 1936. The market for fish leather collapsed after Christmas and so far has shown no signs of recovering.

1/See Commercial Fisheries Review, August 1949, pp. 35-36.

Maximum Bremerhaven production of fish leather was about 2,990 square yards or somewhat more than 60,000 skins monthly. The skins were obtained at little cost from the local filleting factories. For the most part, the skins of cod, coalfish, (pollock) and ling were processed, each type being especially suited for particular applications. Ling yielded the largest and toughest leather, and cod and coalfish were valued for their fine pebbling. To increase the possible uses of fish leather, the Bremerhaven factory coated and pressed the cured leather so as to make it resemble crocodile, snake, or lizard skin. Under present conditions, fish leather can be produced at a cost of about 40% of the cost of good quality cow leather.

Having been forced to buy many unsuited leather substitutes during the past 15 years, the German consumer now wants genuine cowhide, pigskin, etc., rather than substitutes. The small size of the individual pieces of fish leather (usual width about 10 inches) limits the uses to which fish leather can be put, and increases the cost of fabricating large articles. In addition, the fish filleting plants have not shown a great interest in delivering skins of uniform thickness, and most of the skins processed either had holes or thin spots.

HERRING TRAWLERS TO FISH FOR "FRESH FISH": With regard to the import of fresh fish from Iceland, the German trawler owners as a group have decided to start in October to reconvert their trawlers from herring fishing to the catching of "fresh fish", states an October 17 report from the American Consulate. After the expiration of the present Icelandic contract on October 31, it is hoped that the German trawlers will be able to provide the fresh fish to fill the demand. If so, Iceland will not receive another contract.

The fresh fish catches of the German trawler fleet in 1949 are estimated at 160,000 metric tons, as compared with 142,000 in 1948. In 1948, an additional 107,000 tons of herring were landed. In 1950, the German trawler owners expect to land close to 175,000 metric tons of fresh fish.

RETAILING OF FROZEN FISH IN GERMANY: One aspect of Germany's improved economy has been the introduction this summer of household-size packs of frozen fish fillets in many fish stores of Western Germany, according to a September 19 report from the American Consulate. The frozen food industry in Germany is being developed to a large extent by two firms--one dealing in fish and the other in fruits and vegetables. The firm dealing in fish has a chain of 170 retail stores throughout Germany and Austria. Recently a Hamburg firm and a Bavarian firm also started freezing fish for retail stores.

The price of the frozen fish fillets is about 36 percent above the price for the same weight of fresh fish. Fresh fish may now be sold to the consumer for DM 0.90 per kilogram, (approximately 12 cents a pound) while comparable frozen fillets cost DM 1.40 per kilo (approximately 19 cents a pound).

Local fishery circles do not expect the frozen fish consumption to become very large in Germany in the near future; at the present time less than 5 percent of the sea fish landed in Germany is frozen. The higher cost of frozen fish, the paucity of distribution and retailing facilities for frozen foods generally, the relative proximity of the consuming centers to the ports, and the relatively long time the fish remain in ice on shipboard all diminish the prospects of establishing a large-scale, profitable frozen fish industry. Fish are frozen in Germany more to stabilize the market by preventing gluts and scarcities than to appeal to the housewife.

NOTE: Value conversions based on official rate of exchange of 1 Deutsche mark equals U. S. $0.30 (before devaluation).

ROSEFISH FISHERY CONTEMPLATED: German trawlers are expected to devote increasing attention to the catching of rosefish (Sebastes norvegicus Asc.) as a result of recent investigations by the Biologische Anstalt Helgoland, the fisheries research institute financed by the German federal government, according to an October 24 report from the American Consulate. These investigations led to the conclusion that the reproductivity of the rosefish like that of the herring is so large that overfishing is virtually impossible.

The variation in catches on particular grounds is attributed to a normal migration of the fish in search of food, warmer water, etc. It is suspected, though not proved, that the rosefish spends only a part of its life on the ocean bottom and that the rosefish can be found at other times in free-swimming schools in open water.

Rosefish will at some future time be as important a fish as the herring, according to members of the Biologische Anstalt Helgoland.

Greenland

FISHING OFF GREENLAND INCREASING: Portuguese fishing vessels have been numerous on Greenland fishing grounds this summer, according to an Icelandic newspaper report in Fiskets Gang. Five or six vessels were operating off Faeringhavn, serving as motherships for small boats which fished with one man each. Each mothership had about 20 small boats. Portuguese do not have the right to land in Greenland and apparently found it unnecessary as the motherships were large and equipped with stores for five months.

In addition, a delegation from the Faeroe Islands recently arrived in Faeringhavn to examine the possibilities for installing a land station and factory as a basis for an expanded Faeroe Islands fishery on Greenland's west coast, according to the Danish newspaper, Berlingske Tidende.

Indonesia

IMPROVEMENT OF FISHERIES PROPOSED: A welfare conference held at Buitenzorg, Java, on August 8-10, 1949, attended by representatives of the principal political and administrative subdivisions of Indonesia, including the Republic, resulted in the drafting of a Special Welfare Plan for 1949. The purpose of this conference seems to have been to present to the Round Table Conference and to the new government to be established as a result of that Conference, a plan for the improvement of production facilities, including fisheries, according to a September 23 report from the American Consulate General at Batavia, Java. The proposed plan includes plans for improvement in agriculture and fisheries.

The plan envisages the improvement of fish breeding and preservation methods through intensified research and information. This is expected to add 22 million pounds of fish from rice ponds in Java. Borneo too is seen as capable of a greater production of fish.

By the granting of credits for the construction of fishing boats, it is hoped to increase the production of sea fishing enterprises. Sea fish production in 1948 amounted to about 506 million pounds and improvement of facilities is expected to yield an additional 66 million pounds of fish.

It is hoped that inland fish production can be increased to 374 million pounds per year and that of sea fish production to 990 million pounds, within a few years. In this way the current purchases of fish from abroad at a cost of about $2,280,000 may not be necessary.

NOTE: Value converted on the basis of the exchange rate (prior to devaluation) of one Dutch florin equals $0.38 U. S.

Italy

ITALO-DANISH TRADE AGREEMENT INCLUDES FISHERY PRODUCTS: A new Italo-Danish trade reciprocity agreement went into effect on July 1 this year taking the place of a similar agreement which had expired last May, according to the September 1949 Canadian Fisheries Department Trade News. During the year of its operation, Italy is to receive from Denmark heavy-salted dried fish valued at $7,092,400 and slack-salted dried fish worth at least $1,251,600. Maximum prices included in the agreement are (in cents per pound): heavy-salted: cod 15.6, saithe 8.5, other 11.1; slack-salted fish, 24.5.

The total quantity involved is about 45 million pounds of heavy-salted and about 5 million pounds of slack-salted fish, less than half of Italy's total imports of salt fish last year. Under the agreement business will be transacted at special exchange rates which will reduce the amount to be paid by the Italian importer in his own currency to perhaps not much more than half of what he would have to pay for fish at nominally the same price from a dollar country. It will therefore be quite impossible for fish from dollar countries to compete with the Danish product on a price basis.

Japan

DAMAGE TO FISHERIES BY SEPTEMBER TYPHOON: The Japanese Fisheries Agency submitted a report to SCAP on the damage to the Japanese fisheries and effect on production of the typhoon "Kitty" which struck Japan early in September, according to the September 10 report from SCAP's Natural Resources Section. An estimated total damage of ¥1,300,000 ($3,611,000 1/) was suffered by the fishing industry in the coastal prefectures extending from Shizuoka northward to and including Hokkaido. Severest damage to ports and shore facilities was in the prefectures of Kanagawa, Shizuoka, and Chiba. Of the total estimated damage, 58 percent was to fishing ports or harbors, 21 percent to fishing gear, such as nets, 7 percent to fishing boats lost or damaged, and the remaining 14 percent to property, such as warehouses, markets, and other shore facilities. Total loss of catch is estimated at 19,745,000 kan (163,232,000 pounds). Most of this anticipated decrease in production is due to loss of fishing gear and is expected to be in Hokkaido (13,600,000 kan) (112,431,200 pounds), Chiba (3,800,000 kan) (31,414,600 pounds), and Shizuoka (900,000 kan) (7,440,300 pounds). Relief funds

1/ Converted on basis of 360 Japanese yen equal $1.00 U. S.

will be needed for repairing port facilities, purchasing fishing gear, and rebuilding and repairing fishing boats in order to resume operations.

FISHERIES COOPERATIVE PROGRAM MAKING PROGRESS: Since the fisheries cooperative legislation enacted on November 27, 1948, by the Japanese Diet,[1] Japanese fishermen have been giving careful deliberation to the formation of cooperatives and the privileges granted them under the law, according to the September 17 Weekly Summary of SCAP's Natural Resources Section. By August 1, 1949, fishermen in practically every fishing village in Japan had taken the initial steps to form cooperatives, and there is every indication that by the end of 1949 at least 5,000 cooperatives with a total membership of more than one million will have been formed. A recent investigation of 15 representative villages disclosed that 46 cooperatives had been formed prior to August 1, 1949. These cooperatives had 43 percent more members than the old associations in the same villages before their dissolution. Less than 25 percent of the officials of the new cooperatives were officials of the old associations.

The cooperative program is a major step in the democratization of the Japanese fishing industry. However, the ancient system of fisheries rights and its attendant abuses of absentee ownership, concentrated holding, and vestiges of feudalism must be reformed before this democratization is complete. The necessity for reform has long been recognized by SCAP and advice and guidance have been provided the Japanese Government in preparing a reform law. This law is now awaiting Diet action. At present, reactionary elements in the fishing industry are exerting considerable pressure to prevent its passage.

PORPOISE AND DOLPHIN FISHERY, 1948: More than 100 licensed vessels (most of them under 100 gross metric tons) operate in the porpoise and dolphin fishery, which is known in Japan as "small-type whaling." Each vessel is armed with a gun less than 50 millimeter in inner diameter, according to the October 8 Weekly Summary. Owned and operated by about 50 companies, these ships are permitted to take minke whales (Balaenoptera acutorostrata), beaked whales (Berardius bairdii), killer whales (Orca gladiator), pilot whales (Globicephalus melas and G. scammoni), false killers (Pseudorca crassidens), and several other types of dolphins and porpoises. The killing of sperm, sei, blue, and fin whales by operators of these vessels is prohibited by Japanese law.

Table 1 - Japanese Catch of Small-Type Whaling, including Number of Companies and Vessels in Operation, 1948

Item	No.
Enterprises	43
Boats operated	61
Type of whales captured:	
Minke	285
Beaked	76
Killer	48
Pilot[1]	725
Others	40
Total catch	1,174

1/Includes false killer.

Vessels operate from about 16 stations scattered from Kyushu to Hokkaido, often making use of large-type land stations for processing the catch, and in other instances using separate stations. Neither seasonal limit on operations nor length limits have been imposed in the past.

During 1948, 61 vessels operated by 43 companies took 1,174 whales. Because the vessels prior to 1948 were licensed by prefectures rather than by the central government, no accurate statistics are immediately available for the earlier years.

1/See Commercial Fisheries Review, September 1949, page 30.

Most of the oil extracted from blubber and bones, except that from the minke, is used as lubricant, and the head oils are used for lubrication of watches and other precision instruments. The head oil of the pilot whale is considered particularly valuable for this purpose. The government-controlled price for unrefined head oil is ¥96,000 (about $266) per metric ton. Some of this oil gets into illegal channels where it commands prices of $550 to $650 per metric ton.

Table 2 - Products of Japanese Small-Type Whaling, 1948

Product	Metric Tons
Meat, edible	1,010
Blubber, edible .	373
Oil	76
Miscellaneous ...	243
Total	1,702

JAPANESE GOVERNMENT

Nicaragua

PRESENT AND POTENTIAL SHRIMP FISHERY: Regarding the present and potential shrimp fishery in waters off Nicaragua, a September 14 report from the American Embassy at Managua states that the only concern known to have engaged in commercial shrimp fishing in this country was a company formerly engaged in fishing on the east coast of Nicaragua, principally for shark livers. This company was apparently entirely owned by Americans, and reportedly had some connection with a company in the United States.

The company had a contract which had been approved by the Nicaraguan Government under which it agreed to invest certain sums in Nicaragua, to employ at least 75 percent Nicaraguan citizens, and to return a certain percentage of its dollar income to Nicaragua. In return it was given the right to fish in Nicaraguan territorial waters.

The company was principally engaged in obtaining shark liver oil. This operation was intended to pay their expenses, and the profits were expected to come from shrimp and spiny lobster fishing and consequent sales in the United States. It is understood that the company engaged in experimentation with a view to locating the shrimp beds on the east coast of the country. The first results of those investigations were understood to have been promising. However, their shrimp operations were small, and the most produced was 65 pounds in one week's operations.

The company stopped operations several months ago, allegedly because of the discovery of a synthetic means of producing vitamin A and the consequent drop in the price of shark liver oil. Shrimp and spiny lobster fishing were not considered to be sufficiently profitable to justify continued operations. All of the facilities which the company had operated (included at one time a refrigerator barge of 341 gross tons; 5 50-foot purse-seine-type shark boats of 20 gross tons; 2 Bahama-Island lobster boats; 1 60-foot shrimp trawler) have been withdrawn from Nicaraguan waters with the exception of the trawler.

Two American citizens, now residing in Nicaragua, have been interested in taking over the trawler and operating a spiny lobster and shrimp fishery on the east coast of Nicaragua, selling the products principally in the United States. Very little is actually known concerning the potentialities of shrimp fishing in Nicaraguan waters, but these Americans have been investigating the situation for the past two to three months. While they at first appeared encouraged, it is now understood that apparently the trawler is not in good condition, and that they may not wish to take it over.

Norway

FINNISH-NORWEGIAN TRADE AGREEMENT: The annual Finnish-Norwegian trade agreement was signed in Oslo, Norway, on October 20, 1949, according to an October 28 report from the American Legation at Helsinki, Finland. Trade amounting to 32.5 million Norwegian kroner (approximately $4,550,000) will be covered by the agreement, which will be in effect November 1, 1949 to October 30, 1950.

Norwegian exports to Finland will include 150,000 kroner ($21,000) of vitamin A concentrates; and the following, in metric tons: herring and dried fish 10,900, fish and whale oil 550, whale fat 2,000, and other non-fishery products.

No fishery products are included in the commodities listed for export from Finland to Norway.

* * * * *

HERRING MEAL PRODUCTS: At a meeting recently held at Sola by the Norwegian Herring Oil and Herring Meal Manufacturers' Association, it was agreed to establish an experimental factory for production of new herring meal products, according to a September 30 report from the American Embassy at Oslo. This factory would work in close cooperation with the industry's laboratory in Bergen. Financing of the project has been completed and the greatest remaining problem is to find a site in or near Bergen suitable for the construction of the factory.

TUNA FISHERY: The catch of bluefin tuna off the Norwegian coast has occasioned considerable comment in Bergen, according to a September 30 report from the American Embassy. It is predicted that the value of this year's catch would total between 3 and 4 million kroner (approx. $420,000-560,000). As tuna fishing requires special gear, only some 20 boats have been engaged in this type of fishing, chiefly off the Helgeland district. Catches are reported to be heavy with one boat alone catching tuna worth 100,000 kroner (approx. $14,000) in four days.

The principal export market is said to be Italy where tuna is very popular.

A local Norwegian sardine cannery is seriously thinking of starting to pack tuna, and it would not only be profitable but would enable the firm to keep its workers employed for a considerably longer period each year than is now possible. (The seasonal character of sardine cannery employment presents a very difficult problem to employers, cannery workers and many communities.)

* * * * *

PLASTIC FROM FISH WASTE: A Bergen firm has been experimenting with the production of plastic from fish waste. According to newspaper reports, the firm has been making such a product at a plant near Bergen since the beginning of the year. Results are said to have been so good that the company is to expand production, using its cannery in Moskenes, Lofoten, for this purpose. Estimated production is from 8,800 to 11,000 pounds a day.

NOTE: Values in dollars converted on basis of 7.14 Norwegian kroner equal $1.00 U. S.

Republic of the Philippines

REVIEW OF THE FISHERIES, 1948: Production: The Philippine Government has estimated the total fish production in the year 1948 from commercial, fish pond, and municipal and sustenance fisheries at 429,000,000 pounds, compared with 575,080,000 pounds in 1947 and 594,000 pounds in 1940, according to an August 12 report from the American Embassy at Manila (see table).

Philippine Production of Fishery Products, 1948, 1947 and 1940 (Extimated)1/

Item	1948	1947	1940
	lbs.	lbs.	lbs.
Production from:			
Commercial fishing boats (of at least 3 M.T.)	92,400,000	138,600,000	251,900,000
Fish ponds	50,600,000	67,760,000	44,660,000
Municipal and sustenance fisheries	286,000,000	368,720,000	297,440,000
Totals	429,000,000	575,080,000	594,000,000

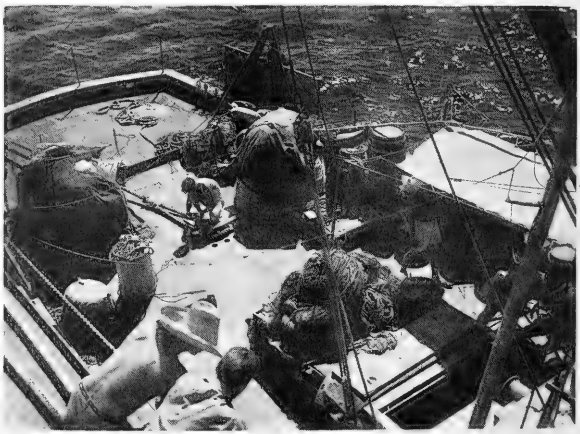
1/Does not include gathered fishery products, such as shells, trepang, coral, etc.

The biggest proportion of the 1948 catch was produced by municipal and sustenance fisheries (286,000,000 pounds), followed by commercial fisheries (92,400,000 pounds), and fish ponds (50,600,000 pounds).

The commercial catch of fishery products in the Philippines in 1948 totaled 92,400,000 pounds (valued at $28,766,891), compared with 138,600,000 pounds (valued at $42,340,780) in 1947. There were 469 commercial fishing boats operating in 1948, compared with 504 in 1947. Part of the decline in the commercial catch in 1948 was due to the fact that fewer vessels were operating in that year.

Processed fish production in 1948 amounted to 12,592,727 (valued at $3,692,760), compared with 41,287,957 pounds (valued at $15,273,471) in 1947. This decline in processed fish is due to the lower commercial catch.

In 1948, there were 445 licensed fish ponds with an area of 23,687 acres, which is an increase over 1947 when 323 ponds with 14,801 acres were in operation. However, in spite of the increase in ponds and acreage the production from this fishery in 1948 was only 50,600,000 pounds, compared with 67,760,000 pounds in 1947.



DECK OF THEODORE N. GILL SHOWING SHARK LONG-LINE GEAR. THE VESSEL IS ONE OF THREE EXPLORATORY VESSELS OF THE U.S. FISH AND WILDLIFE SERVICE'S PHILIPPINE FISHERY PROGRAM.

Prices: At the close of the first half of 1949, the retail prices in Manila for sea bass (apahap) and milkfish (bangos) per pound were 64 cents and 49 cents, respectively, compared with 20 cents and 11 cents in 1941.

Ever since the war, the ratio of fish production to demand has been such as to sustain prices at a relatively higher level than most other commodities due to the fact that fish ranks second to rice as an essential of the lowest income groups.

Foreign Trade: A commercial summary of incoming manifests shows 23,100,000 pounds of fishery products imported during the first half of 1949 of which 11,660,000 pounds were canned sardines. The indicated level of imports is about the same as for the second half of 1948, when imports of fishery products amounted to more than 24,200,000 pounds, valued at $4,200,000.

Exports of salted, smoked, and dried fish during 1948 amounted to 358,400 pounds; and for the first half of 1949, 181,440 pounds.

Deep-Sea Fishery: The deep-sea fishery operated by the Japanese before the war has not been fully revived. In June this year (shortly after the discontinuance of reparations from Japan), it was reported that SCAP would seek the agreement of the Philippine Government to an adjustment of sea boundaries so that Japanese fishing fleets might operate in what are now Philippine waters. There was an immediate negative reaction in the Philippines. However, few local businessmen with substantial capital have shown interest in filling the gap left by the Japanese in the offshore fishing industry.

Depletion Problems: The Philippine Bureau of Fisheries continues to be concerned over the depletion of the fisheries caused by the use of dynamite and poison to facilitate fishing operations in coastal waters. After at least two years of attempting to educate the fishermen to voluntarily desist, the Government issued an order imposing heavy penalties not only on the persons guilty of using illegal methods, but on merchants offering fish for sale which had been caught by illegal methods.

Miscellaneous Fishery Products: The quantity of shells, especially trocha, gathered in 1948 was greatly increased. There is no evidence of activity in regard to sponges, pearls, or other minor sea products.

NOTE: Values converted on the basis of one Philippine peso equals 50 cents U.S.

Ryukyu Islands

STATUS OF THE FISHERIES, 1949: Introduction: Indigenous food production, including fisheries products, supplies approximately 65-70 percent of the food requirements for a population which already totals over 900,000 persons, according to the 1949 Annual Report of Food and Agriculture Organization of the United Nations for Ryukyu Islands. It is anticipated that increased agricultural, fisheries and industrial activity will operate to achieve a further leveling of economy along stable lines in the Ryukyu Islands.

Emphasis during the year has been on the procurement of gear and fuel for the fishing fleet. Considerable progress has been made in this respect. Although the number of vessels made available to the fleet has increased, it is imperative to increase the number of vessels operating with Japanese-type engines. They have increased and it is intended that these will soon supplant the more expensive American engines now used.

During the fishing season, the supply of fish is equal to the demand. The next year should bring a realization of the hope of an export of marine products. Refrigeration is still a problem but there are indications that this will be forthcoming. A public market is nearing completion in Naha which should help in the distribution of the catch. The bonito stick industry is slowly being revived which will provide a source of protein during the off season. The industry shows promise of attaining its prewar level in fiscal year 1951.

Production: Most of the fishing fleet was destroyed during the war. It has been necessary to use reconditioned military craft for this purpose, and they have been very unsatisfactory. With a third more boats, the catch has been less than half of prewar production. There have been other factors, such as inadequate fuel and supplies, but the improper craft is the main cause. In the immediate future, Japanese-type fishing boats will be constructed. Fishing is the greatest natural resource of the Islands with an undetermined potential, limited so far only by a shortage of equipment and supplies. Long-line and drive-in fishing are the two methods most frequently used. When ice can be stored in the boats, deep sea fishing will be possible.

Distribution: Due to the fact that distribution facilities are inadequate it is the present policy to dispose of the fish as soon as they are landed. The fishermen only bring in the amount that the trade will bear; this condition results in a restricted production. In times of scarcity there is no reserve with which to supplement the diet. The price is uncontrolled but does not seem to be excessive. A system of reefers and cold storage plants is being set up which should change this situation, and the inland villages can be reached by trucks since the fish would remain frozen for several hours. The price would tend to stabilize since there would not be the haste to sell to prevent spoilage.

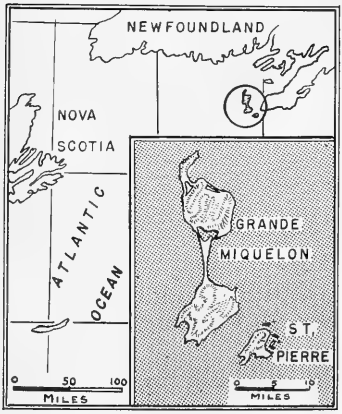
The Civil Governments (there are four separate ones in the Ryukyus) employ technologists who serve as inspectors for the fishing industry. Any violation of regulation is brought to the attention of the Central Fisheries Association and through that agency to the local organizations. Inspections include determination that fishing is being done in allocated waters, by licensed fishermen, and according to approved methods and conditions.

With increased production, there will be a greater quantity available to consumers. With refrigeration, the fish will be in better condition and, as the supply grows, more will be available for the inland population.

Fisheries Education and Research: The Fisheries Experimental and Research Station is still without a permanent building. The two boats (assigned to the Station) damaged during typhoon "Libby," are being repaired and should be in operation for the fishing season. The Station has been removed from the jurisdiction of Okinawa Civil Administration and is now directly responsible to the Military Government, and is to operate on a Ryukyu-wide basis. A carp raising station is planned for Kume Shima. A location for a permanent installation is being investigated.

Consumption: It is estimated that the per capita consumption of fresh fish in 1950-1951 will total 96 pounds.

St. Pierre—Miquelon (French Islands)



REVIEW OF THE FISHERIES: Introduction: Since the St. Pierre Bank has in the past two years generally offered better fishing than others west of the Grand Bank, the Island of St. Pierre is occasionally used by Halifax and Lunenburg trawlers as a haven, according to a September 26 report from the American Consulate General at Halifax. However, traffic of the Island's port is restricted to French trawlers and Lunenburg and Newfoundland schooners visiting the port to pick up supplementary supplies. In recent months, the island's ship-outfitting and provisioning trade (an important industry in the 1920's when 1,500 to 2,500 vessels cleared the port annually) has been drastically reduced by the last two season's disappointing yield to the trawler fleets. In addition, controls over dollar expenditures in Canada for foodstuffs and a great variety of other requirements do not facilitate the acquisition of provisions by French vessels except on a ration basis. Present modern French fishing vessels find it no longer necessary to stop at St. Pierre.

Fishing and Fish Processing Has Declined: Fish processing is also a declining industry. Present plants do not have an important production since they rely for supplies on a small number of local inshore fishermen whose catch is limited by modest equipment and by the trend of fish movements away from the Island's shore waters.

Fishing as an occupation does not appear to attract the interest of the young male population, and the number of boats engaged in regular operations is now probably not more than 25 percent of the peak in 1913 of 343 vessels.

Filleting Plant: Work on the proposed filleting and cold storage plant was at a full stop. Purchase of requisite machinery and equipment has been delayed by an exchange of currency problem, with the possibility that some change in the original concept has occurred. It is now contemplated that the bulk of production would go to the French West Indies rather than to France, if the plan ever materializes. No indication was given of when work on the plant would be resumed. The plan to operate a local fleet of trawlers and heavy inshore boats to furnish fish to the processing plants and the projected filleting plant has been tabled for the present. (See Commercial Fisheries Review, April 1948, page 28.)

Exports: The major item of export during 1948 was 1,000 metric tons of dried cod shipped to the French West Indies.

South-West Africa

PROPOSED TUNA FISHERY AND REDUCTION PLANT: A new tuna corporation recently formed in Africa is at present erecting a factory at Walvis Bay, South-West Africa, according to the September 1949 issue of The South African Shipping News and Fishing Industry Review.

Fish Meal and Oil Plant: To start with, the company is erecting a 20-ton-per-hour fish meal and oil factory capable of processing up to 450 metric tons of raw fish per day. Based on the experience along the Union of South Africa coast, production for this plant will be approximately 6,000 tons of fish meal and 2,000 tons of fish oil per year.

The fish meal industry in the Union of South Africa has already caught up with the internal demand for this commodity and in view of its geographical situation, production in the Walvis Bay area will probably all be destined for the export market, thereby earning valuable foreign exchange.

Tuna Canning: Although the company will concentrate on fish meal and oil operations at the start, it is also planning canning operations towards the end of 1950.

The possibilities of processing and exporting both canned and frozen tuna have received serious consideration by the company. It is well known that tuna are present in quantity in the warmer waters north of Walvis Bay and this is proved beyond any doubt by the tuna industry in Angola.

With the long-term development of tuna fishing in mind, the company has an arrangement with fishing interests in Angola whereby tuna is being canned under the company's trade mark and under the supervision of one of its own men who was sent to Angola specifically for this purpose. As the result of Union of South Africa import restrictions, the tuna pack is being exported to the United States. At the same time a great deal of information has been collected in connection with the habits of tuna and the processing procedure.

Union of South Africa

NEW FISHERY RESEARCH VESSEL: A large and up-to-date fishery survey vessel has been launched at Glasgow for the South African Government, according to the October 22 issue of the British periodical, The Fishing News.

The Africana II is 206 ft. long, 1,300 gross metric tons and has a speed of 13 knots.

Virtually a floating laboratory designed to undertake every aspect of deep-sea research work on the biological, chemical, and physical sides, the vessel is capable of doing 6,000 miles without refueling and is particularly suited to deep-sea work.

* * * * *

REGULATIONS GOVERNING THE SEA FISHERIES: The Union Government's Notice 2030 of the Department of Commerce and Industries, which appeared in the Government Gazette of September 23, 1949, establishes regulations in connection with

the "Sea Fisheries Act No. 10, 1940" (provides for the control of sea fisheries, for the better marketing of sea fish, and for other matters incidental thereto). The Governor-General has issued these regulations under the powers vested in him by Section 11 of this Act, according to an October 5 report from the American Embassy at Pretoria.

The regulations cover licenses for fishing boats and factories, and survey and certification of fishing boats as to seaworthiness; marking of fishing boats; protection of fish and size limits; return to the sea of crawfish or crawfish offal; collection of oysters, mussels and red bait; definitions and sizes of nets; netting to be used in various areas; whaling; control of fishing harbors; production of frozen crawfish tails; fishing statistics; and penalties. All previous regulations published under this Act are repealed and superseded by the new regulations.

According to the new regulations, "except as is specially provided, these regulations shall, in respect of any boat or any factory licensed or required to be licensed under the Act, and of any person or any fish, implement or other matter thereon, extend beyond the territorial waters of the Union."

Uruguay

DANISH FISHING OFF URUGUAY SUCCESSFUL: Danish fishermen who went to Uruguay to fish out of Montevideo some months ago have had an interesting experience, according to a Danish newspaper report in Fiskets Gang. The coast is alive with fish and the Danes have had excellent earnings. They have become friendly with the local population. Experts from both Brazil and Argentina also have come to study Danish fishing methods. There are possibilities of a Danish fishing colony in Uruguay as it is expected that additional Danish fishermen soon will be able to emigrate.

Uruguay purchased two large Esbjerg cutters and contracted with eight Danish fishermen to operate the craft with Uruguayan assistants. In addition, two trap or pound-net vessels of the Fredrikhavns type will be put into service.

"Covina" is the kind of fish most sought after. Fishing trips take two days or less although a longer trip to deeper water for hake gave results beyond expectations. Mackerel, mackerel sharks, and squid also are taken, and large beds of oysters have been found.

Venezuela

DEVELOPS FISHING INDUSTRY: Through the Ministry of Agriculture and the Venezuelan Development Corporation, the Venezuelan Government is taking definite steps to increase the production, distribution, and consumption of fishery products, according to several reports from the American Embassy at Caracas.

Four-Point Program for Increasing Production: A four-point program to benefit the Venezuelan fishery industry was announced as follows:

1. Supply outboard motors to those fishermen who still lack them and install refrigeration units on credit with easy payment terms. This is a continuation of current practice.

2. Construction of 30 larger vessels with diesel motors, of two types: one 34 feet, the other 26 feet. These will be constructed in the three national shipyards. The diesels will be purchased from local agents. These vessels will be sold to fishermen for 20 percent cash and the remainder payable in 20 quarterly payments (5 years).

3. The building of three national shipyards financed by the Corporation.

4. Construction of two modern fish ports: one at Cumana, the other at La Guaira.

Plan to Aid Fishermen of Margarita Island: In order to aid the independent local fishermen of Margarita Island, the new Corporation has instituted, in addition to supplying motors and refrigeration units for their boats, the following plan:

1. Supply of ice.
2. A sure market throughout the year at stable prices.
3. Cash immediately for their catch.
4. Repair service on their boats.
5. Help in getting gasoline and other supplies.

This plan, it is believed, will augment the $60 and $180 per month average earnings of the Island fishermen and captain owners, respectively.

This year the new Corporation has increased its production in this area to 40 metric tons monthly against an average of 16 tons during the first nine months of operation in April through December 1948.

New Warehouse and Refrigeration Plant: A new warehouse and refrigeration plant is planned soon at Puerto La Cruz. The plant has been constructed by one of the companies organized jointly by the Venezuelan Development Corporation and the Venezuelan Basic Economy Corporation. Reputedly equipped to freeze about 20 metric tons of fish daily and to store 400 tons, the plant will also produce 30 tons of ice daily for general use in the region.

Production: Fish production in Venezuela during the last decade has increased from 10,000 to 50,000 metric tons. The official policy of motorization of fish boats has contributed to the increase in production, which will be intensified with the introduction of new techniques, new facilities, and with the establishment of a system of distribution which will deliver the product to the consumer in perfect condition and at a reasonable price.

Modernization and Motorization of Fishing Industry: The Venezuelan Government is spending considerable sums of money to enlarge, modernize, and motorize the fishing industry. In 1947, as a first step in its motorization plans, it ordered from American manufacturers 400 inboard marine motors ranging from 16 to 42 hp., and 350 outboard motors of 9.8 hp., at a total cost, including estimated installation fees, of $62,340. Few fishermen are disposed to purchase engines through normal channels when such liberal terms are available from the Government. In October the corporation announced that it will purchase an additional 150 motors of 10 hp., 100 of

16 hp., and 100 of 22 hp. In May it was reported that 515 motors have already been distributed among 641 fishermen who requested them in the districts around the towns of Carupano, Cumana, Puerto La Cruz, La Guaira, Puerto Cabello, Las Piedras, and Maracaibo.

Table 1 - Venezuela's Imports of Marine Motors, Hardware and Small Craft from the United States, 1947 with Comparisons

	1947		1945		1941	
	No.	Value	No.	Value	No.	Value
Marine Motors	2,016	$1,309,117	201	$260,873	186	$ 80,386
" Hardware ..	-	46,775	-	42,302	-	12,920
Small Craft	58	386,383	34	270,450	8	51,670
Total Value	-	1,742,275	-	573,625	-	144,976

Marine engines and marine hardware are not manufactured in Venezuela and must be imported (Table 1). However, almost all of the boats used by the Venezuelan fishing industry, the largest user of small craft in Venezuela, are constructed locally of native woods, with the addition, in some cases, of imported pitch pine.

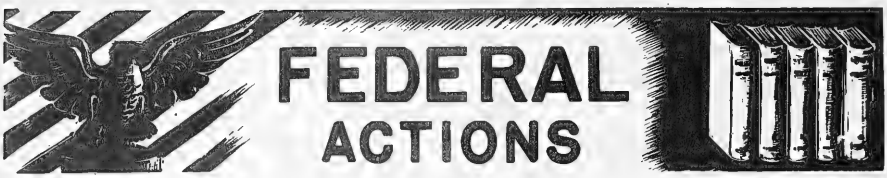
The Ministry of Agriculture estimates that there are in the neighborhood of 5,000 fishing craft of all types in Venezuela, a very small percentage of which are motorized. They are built by native craftsmen in small-industry, widely diversified areas. There are only two small shipyards of importance, one Government-owned, and one private. There are no special regulations covering the importation of marine motors, hardware, and small craft, except certain small duties.

PRODUCTION OF EDIBLE FISH IN THE RED SEA

The fish marketing system in Egypt is not well organized. There are only 3 fish merchants in Suez who buy on a comparatively large scale for distribution to retail markets. One of these owns a transport and sends a supply to Cairo daily. These shipments average 2 metric tons of fish per day, but amount to as much as 5 to 6 tons on days in which good catches are landed. Lack of refrigeration facilities and well organized distribution methods as well as irregular volume in catch cause considerable price fluctuation.

Processing fish at the Suez landing point is limited to tinning of sardines on a very small scale during the sardine season and to salting, particularly of mullet, at times when larger than usual volume is landed. An American canning expert, retained early in 1948 to advise the Egyptian Government concerning possibilities of expansion of Egypt's canning industry, is presently studying the practicability of utilizing Red Sea fish for a plant at Suez.

Fishery Leaflet 310



U. S. Coast Guard

VESSEL OWNERS REQUIRED TO MARK WRECKS: The owner of any vessel which becomes wrecked or sunk, accidentally or otherwise, in the navigable waters of the United States is required by law to mark immediately such obstruction with a buoy or day-beacon by day and a light at night until it has been removed or abandoned, according to the U. S. Coast Guard Bulletin of October 1949.

Furthermore, the owner is required to report the name and accurate location of the wreck, depth of water over it, and the location and description of marking established or proposed. This report is made to the nearest Officer in Charge, Marine Inspection, U. S. Coast Guard.

In the event the owner fails to take action and the Coast Guard must mark the wreck for the protection of navigation, or replace non-suitable markings, the owner is liable for the cost of placing, maintaining, and removing the markers.

Legal abandonment of a sunken wreck is the complete relinquishing of all ownership, right and title to the property. A wreck is not abandoned to any person, agency or the United States; an abandoned wreck has no owner. Usually abandonment is accomplished by an owner declaring his intent in a letter to the Corps of Engineers.

Food and Drug Administration

CHANGES IN CANNED SHRIMP AND OYSTER LABELING REQUIREMENTS: Notice of proposed amendments to Section 155.10 and 155.40 of the regulations for the labeling of canned sea food (shrimp and oysters) in connection with the inspection service under the Federal Food, Drug and Cosmetic Act was published in the Federal Register of October 6, 1949. No written comments, data, or arguments having been received within the period prescribed in the notice, the sections involved were amended as proposed.

Effective on date of publication, the amendments appeared in the Federal Register of November 16, 1949; and they provide mainly for the optional use of the mark "Production Supervised by U. S. Food and Drug Administration" on shrimp and oysters packed in establishments under Food and Drug Administration inspection, with some minor changes in wording. (See Commercial Fisheries Review, November 1949, p. 69.)

* * * * *

USE OF PICKING CUPS IN THE PACKING OF CANNED SHRIMP: With reference to plants under the Food and Drug Administration sea food inspection, that agency published in the Federal Register of November 24 amended regulations concerning the use of picking cups in the packing of canned shrimp.

In Section 155.6, General requirements for plant and equipment, the following paragraph is amended to read:

(f) Shrimp shall be picked into flumes which immediately remove the picked meats from the picking tables; except shrimp may be picked into seamless containers of not more than 3 pints capacity if the picked meats are not held in such containers for more than 15 minutes before being flumed from the picking tables.

Section 155.6 is further amended by adding the following new paragraph:

(o) If shrimp are picked into containers, such containers shall be cleaned and sanitized as often as may be necessary to maintain them in a sanitary condition, but in no case less frequently than every 2 hours. Whenever pickers are absent from post of duty, containers shall be cleaned and sanitized before picking is resumed.

These amendments became effective as of November 18, 1949.

Eighty-first Congress (First Session)

OCTOBER 1949

ADJOURNMENT:

Pursuant to House Concurrent Resolution 148, the House of Representatives and the Senate of the Eighty-First Congress (First Session) adjourned on October 19, 1949.

All proposed legislation of the First Session retains the status reached on the day of Final Adjournment (October 19).

The Second Session of the Eighty-First Congress is scheduled to commence on January 3, 1950.

Listed below are all the public bills, resolutions, etc., introduced and referred to committees, or passed by the Eighty-First Congress and signed by the President during October 1949 (unless otherwise specified), which affect in any way the fisheries and fishing and allied industries.

PUBLIC BILLS AND RESOLUTIONS INTRODUCED AND REFERRED TO COMMITTEES:

House of Representatives:

PRESIDENT'S MESSAGE: Fish restoration: Received veto message on H. R. 1746, to provide Federal aid to States in Fish restoration and management projects. Referred to the Committee on Merchant Marine and Fisheries and ordered printed as a H. Doc. No. 372. (October 12, 1949.)

The following bill introduced prior to October 1, 1949, was not previously shown under this section:

H. R. 5594 (Spence) - A bill to amend the Export-Import Bank Act of 1945, as amended (59 Stat. 526, 666; 61 Stat. 130), to vest in the Export-Import Bank of Washington the power to guarantee United States investments abroad; to the Committee on Banking and Currency. (Introduced July 12, 1949.)

Senate:

S. 2633 (Knowland and Downey) - A bill to give effect to the Convention for the Establishment of an International Commission for the Scientific Investi-

gation of Tuna, signed at Mexico City, January 25, 1949, by the United States of America and the United Mexican States, and the Convention for the Establishment of an Inter-American Tropical Tuna Commission, signed at Washington, May 31, 1949, by the United States of America and the Republic of Costa Rica, and for other purposes; to the Committee on Foreign Relations.

S. 2658 (Chapman and for Withers) - A bill to establish rearing ponds and a fish hatchery in the State of Kentucky; to the Committee on Inter-State and Foreign Commerce.

ROSEFISH COOKERY -A DEMONSTRATION MANUAL

FISH AND WILDLIFE SERVICE HOME ECONOMISTS WORKING IN TEST KITCHEN AT SERVICE'S TECHNOLOGICAL LABORATORY, COLLEGE PARK, MARYLAND.

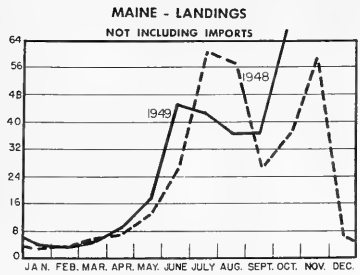
Fish cookery demonstrations have been arried on extensively by the Fish and Wildlife Service to acquaint the American people with the wide variety of fishery products available as well as the many recipes suitable for preparing each product. These demonstrations have been given before women's clubs, home economics teachers and students, home demonstration agents, school lunchroom supervisors, fish dealers, and others interested in foods.

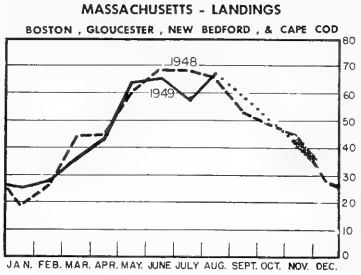
The demonstration outlined in Rosefish Cookery - A Demonstration Manual is planned especially to show such groups some of the ways of preparing and serving rosefish and contains recipes, suggested garnishes, a market order, a list of equipment needed, preparations before the demonstration, an outline of steps in the demonstration, an accompanying discussion, and references.

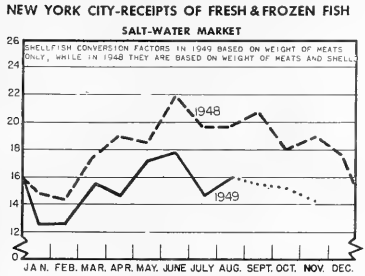
--Fishery Leaflet 320

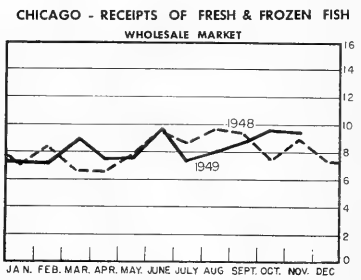
LANDINGS AND RECEIPTS

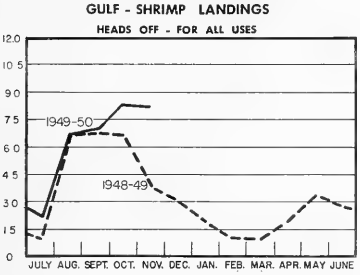
In Millions of Pounds

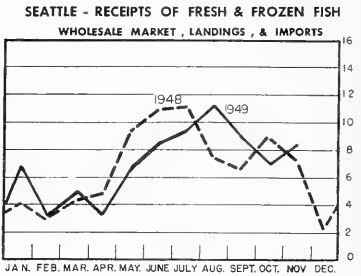




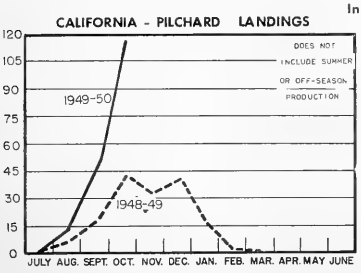


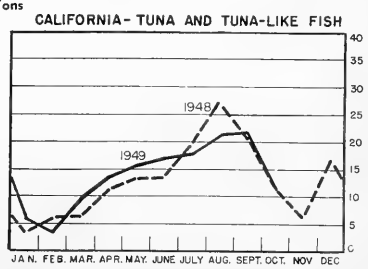






In Thousands of Tons



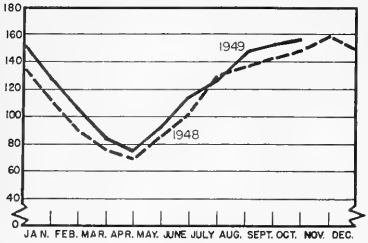


••••••• ESTIMATED

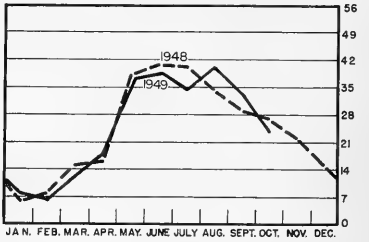
COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

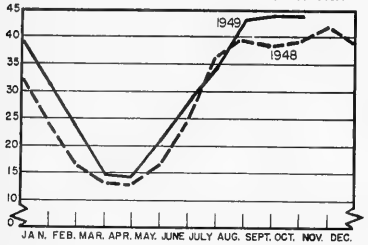
U.S. & ALASKA - HOLDINGS OF FROZEN FISH



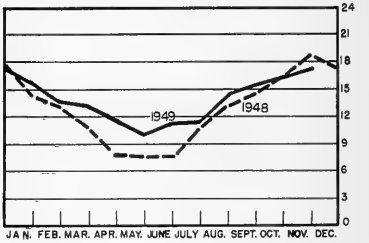
U.S. & ALASKA - FREEZINGS



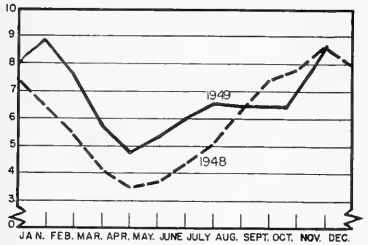
NEW ENGLAND - HOLDINGS OF FROZEN FISH



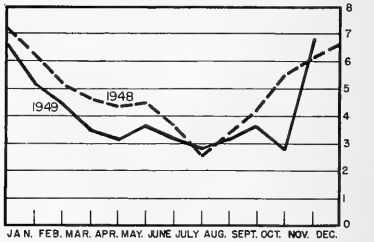
NEW YORK CITY - HOLDINGS OF FROZEN FISH



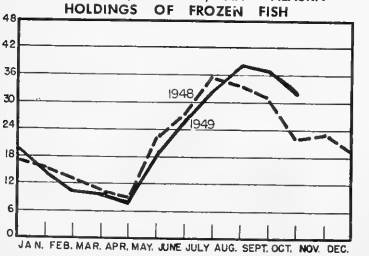
CHICAGO - HOLDINGS OF FROZEN FISH



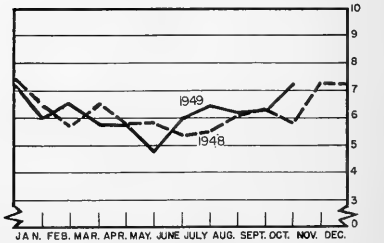
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH



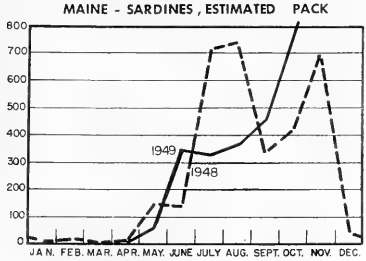
CALIFORNIA - HOLDINGS OF FROZEN FISH



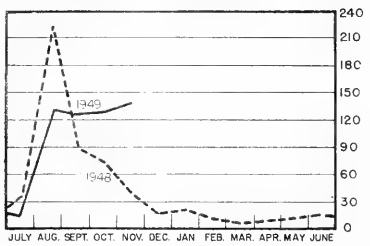
CANNED FISHERY PRODUCTS

In Thousands of Standard Cases

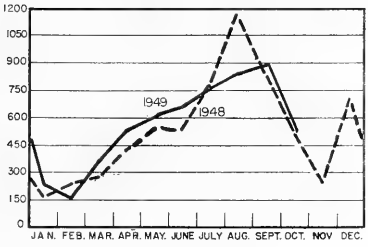
MAINE - SARDINES, ESTIMATED PACK



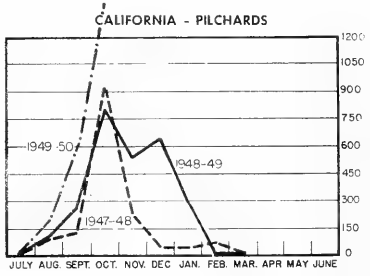
UNITED STATES - SHRIMP



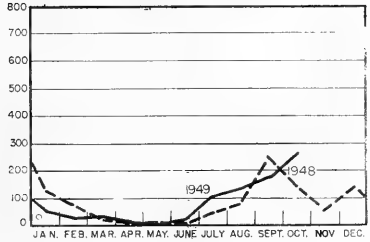
CALIFORNIA - TUNA



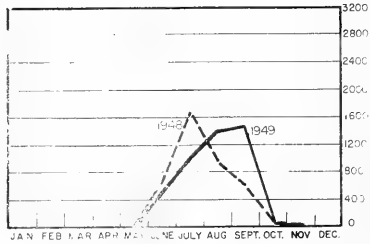
CALIFORNIA - PILCHARDS



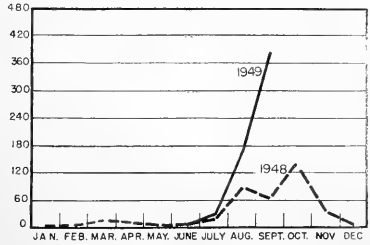
CALIFORNIA - MACKEREL



ALASKA - SALMON



WASHINGTON - PUGET SOUND SALMON

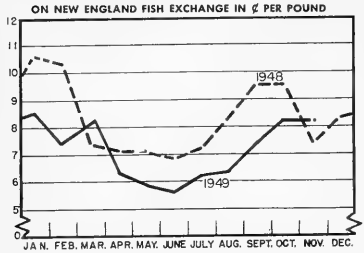


STANDARD CASES

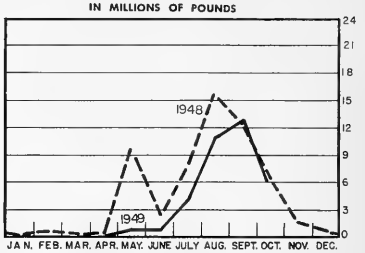
Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48	—	5 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound tall	16 oz.

PRICES . IMPORTS and BY-PRODUCTS

BOSTON - WEIGHTED AVERAGE PRICE
ON NEW ENGLAND FISH EXCHANGE IN ¢ PER POUND

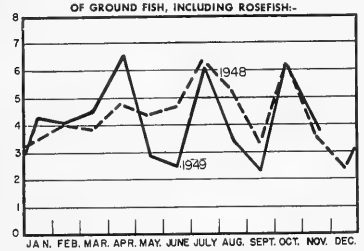


MAINE - IMPORTS OF FRESH SEA HERRING
IN MILLIONS OF POUNDS

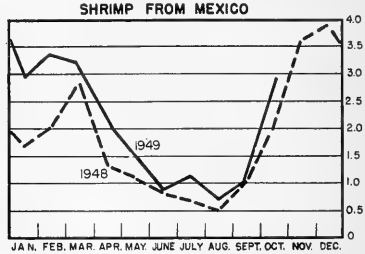


In Millions of Pounds

U.S. - IMPORTS OF FRESH & FROZEN FILLETS
OF GROUND FISH, INCLUDING ROSEFISH:-

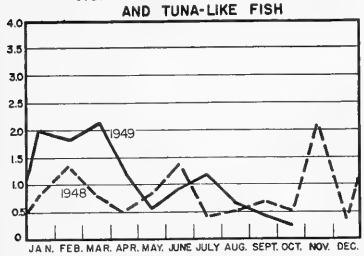


U.S. - IMPORTS OF FRESH AND FROZEN SHRIMP FROM MEXICO

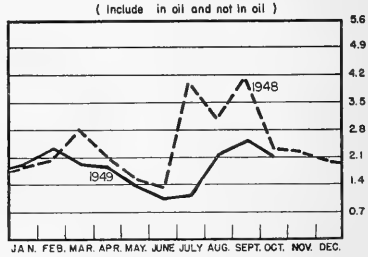


IN MILLIONS OF POUNDS

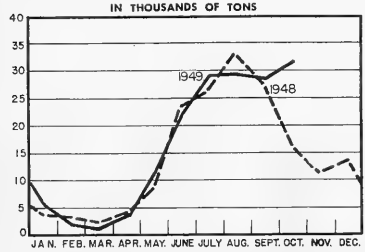
U.S. - IMPORTS OF CANNED TUNA AND TUNA-LIKE FISH



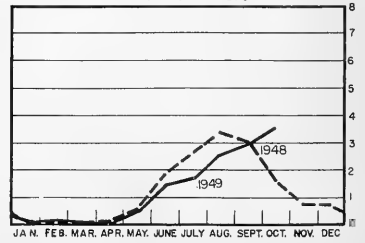
U.S. - IMPORTS OF CANNED SARDINES
(Include in oil and not in oil)



U.S. & ALASKA - PRODUCTION OF FISH MEAL
IN THOUSANDS OF TONS



U.S. & ALASKA - PRODUCTION OF FISH OIL
IN MILLIONS OF GALLONS



Recent publications of interest to the commercial fishing industry are listed below.

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
FL - FISHERY LEAFLETS.
MDL - MARKET DEVELOPMENT SECTION LISTS OF DEALERS, LOCKER PLANTS, ASSOCIATIONS, ETC.
SEP - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title
CFS-499	- Frozen Fish Report, October 1949, 10 p.
CFS-500	- Massachusetts Landings, July 1949, 14 p.
CFS-501	- Maine Landings, August 1949, 4 p.
CFS-502	- Fish Meal and Oil, September 1949, 2 p.
CFS-503	- Texas Landings, September 1949, 4 p.
CFS-504	- Manufactured Fishery Products, 1946, Annual Summary, 7 p.
CFS-507	- Frozen Fish Report, November 1949, 10 p.
CFS-508	- Maine Landings, September 1949, 4 p.
CFS-509	- Texas Landings, October 1949, 4 p.
FL-265 (Revised)	- Bibliography of the Preservation of Fishery Products by Freezing, 87 p.
MDL-1 (Revised)	- Producers of Packaged Fish, 9 p.
Sep. 239	- The Mussel Resources of the North Atlantic Region-- Part I - The Survey to Discover the Locations and Areas of the North Atlantic Mussel-Producing Beds Part II- Observations on the Biology and the Methods of Collecting and Processing the Mussel Part III-Development of the Fishery and the Possible Need for Conservation Measures
Sep. 240	- pH Data on Pacific Oysters
Sep. 241	- Fisheries Technological Research Program 1949-50

MISCELLANEOUS PUBLICATIONS

THE FOLLOWING PUBLICATIONS MAY BE OBTAINED, IN MOST INSTANCES, FROM THE AGENCIES ISSUING THEM.

Canadian Fishery Markets (Review and Outlook), Market Bulletin No. 3, September 1949, 32 p., processed, Department of Fisheries, Ottawa, Canada. A review of the production and marketing of Canadian fishery products and the outlook for the marketing of the 1949 production is

contained in this publication. In addition, it analyzes the effects of the changes in the marketing situation in respect to Canadian fishery products because of the devaluation of the English pound and the subsequent devaluation of the Canadian dollar. It includes discussions of the domestic market, the U. S. market, and other foreign markets by types of fishery products (fresh and frozen, canned, cured, all forms of shellfish, and fish meal and oils).

Current Tables Atlantic Coast North America, 1950, Serial No. 724, 174 p., with diagrams, printed, 25 cents. Coast and Geodetic Survey, U. S. Department of Commerce, Washington 25, D.C., or its agencies. Detailed data are contained in this publication on daily ocean current predictions, current differences and constants, velocity of current at any time, duration of slack, rotary tidal currents, wind-driven currents, the Gulf Stream, and current diagrams.

Draft Budget for 1950 (5th Session FAO Conference, November 21, 1949), C49/4, 43 p., processed. Food and Agriculture Organization, Washington, D. C., August 1949. Budget estimates for FAO'S Fifth Financial Year, 1950, are contained in this publication. Includes budget estimates for the Fisheries Division.

Draft Program of Work for 1950 (5th Session, FAO Conference, November 21, 1949), C49/3, 43 p., processed. Food and Agriculture Organization, Washington, D. C., August 1949. Presents the technical program for the various divisions of FAO: fisheries; agriculture; distribution; economics, marketing, and statistics; forestry and forest products; information; nutrition; and rural welfare.

Fats and Oils, Commodity Series, Bulletin No. 13, August 1949, 93 p., processed, 50 cents. Food and Agriculture Organization, Washington, D. C. This bulletin deals with the "fixed" fatty oils or products made from them, including whale and fish oils, but excludes sperm whale oil, fish liver oils, and industrial (brown or white) cod oil. The supply and distribution situation for fats and oils is reviewed and all "visible" fats and oils are covered. The major portion of the report consists of tables which give the indigenous production, international trade, consumption and utilization, and market prices in the United States. Based on statistics and other information available up to May 20, 1949.

Fifth Report to Congress of the Economic Cooperation Administration (For the Period April 3-June 30, 1949), 141 p., printed. Economic Cooperation Administration, Washington, D. C., November 1949. Covers activities under the Economic Cooperation Act of 1948 as well as the programs of economic aid to China and to the Republic of Korea. Included in the appendix is a summary of the status of the United States Foreign Relief Program and the United States Foreign Aid Program. Although edible fishery products are specifically listed as a group in only one table, since in most cases they are included under the broader category of "meats and fish," the report will be of value to members of the fishing industry interested in the progress of the ECA program.

Foredrag ved Sildoljeindustriens Kursus i Bergen, 22-27 November 1948 (Lectures at the Herring Oil Industry's Course in Bergen, November 22-27, 1948), 299 p., in Norwegian, printed, illus., 14 Norwegian kroner (approx. $2.00) plus postage. Norwegian Herring Oil and Meal Industry Research Institute (Sildoljeog Sildemelindustriens Forskningsinstitutt), Bergen, Norway, 1949. (For sale by A. S. J. W. Eides Boktrykkeri, Bergen, Norway.) The Norwegian Herring Oil and Meal Industry Research Institute of Bergen late in 1948 arranged a course of lectures for the Norwegian herring reduction industry in order to make generally available as much of the experience that has been gained in utilizing modern

practices in the herring reduction industry and to establish an intimate relationship between those working in the industry and the Institute. These lectures have been incorporated in this book. The 26 chapters cover the following subjects regarding the herring oil and meal industry: research and control; establishment of operating control; raw material and product control; the weighing of herring meal; design and arrangment of herring oil factories; the storage of herring and the newer preserving methods; cooking and pressing processes; cooker construction; one- and two-screw presses; separation problems; DeLaval separator in the herring oil industry; Escher Wyss three-phase centrifuge; the drying process; drying methods and dryer installations; examination of meal prepared by different drying methods; notes on practical firing; stickwater's chemical nature and food value; new production methods and systems; storage of meal and oil; herring meal's food value and practical use; Animal Food Act's regulations regarding herring meal; phospholipides; the Icelandic herring oil industry; herring tagging; reasons and remedies for decreased work efficiency; consultant activities.

"The Fisheries of Germany," article, Trade News, September 1949, vol. 2, no. 3, pp. 19-22, processed. Director of Information, Department of Fisheries, Ottawa, Canada. A review of Germany's fisheries for 1948 with comparisons for prewar years. Includes data on Western Germany, prewar data on Eastern Germany, and a discussion of the equipment used.

Fishery Products At Annecy, Tariff Bulletin No. 3, October 1949, 12 p., processed, distribution limited. Department of Fisheries, Ottawa, Canada. A review of the 1949 tariff negotiations at Annecy, France, in relation to the Canadian fishing industry. Contains a detailed listing of the tariff concessions on fishery products granted by acceding countries, by present contracting parties, and by Canada. It also lists the modifications in preferential margins.

Japanese Antarctic Whaling Expedition, 1948-49 (Statistical Summary), by William M. Terry, Preliminary Study No. 34, 38 p., processed. Natural Resources Section, Supreme Commander for the Allied Powers, Tokyo, Japan, October 1949. (Reports may be purchased only in photostat or microfilm from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.) A statistical summary of the operations of the two Japanese whaling fleets in Antarctic waters during the 1948-49 season is contained in this preliminary report. Included are data on production statistics (catch, processing, production), biological composition of the catch, special biological observations and numerous figures and tables.

Light List Intracoastal Waterway of the United States, 1949, (Hampton Roads to the Rio Grande including inside waters), CG-135, 251 p., printed. United States Coast Guard, Treasury Department, Washington, D. C., 1949. (For sale by the Superintendent of Documents, Washington, D. C., 75 cents.) This list, published annually, describes all aids to navigation maintained by or under authority of the U. S. Coast Guard on the Intracoastal Waterway and inside waters on the Atlantic and Gulf coasts of the United States, from Norfolk, Va., to the Rio Grande.

Maine Sea and Shore Fisheries Laws and Regulations (Revised to September 1, 1949), 176 p., printed, free. Maine Department of Sea and Shore Fisheries, Augusta, Maine. This handbook contains the second biennial revision of the sea and shore fisheries laws. Included are all statute laws, rules and regulations, private and special laws, and related statutes pertaining to sea and shore fisheries; regulations covering the building of weirs; information on clam flats closed because of pollution; and a list of licenses and fees.

Malayan Fisheries (A Handbook Prepared for the Inaugural Meeting of the Indo-Pacific Council, Singapore, March 1949), edited by G. L. Kesteven, 96 p., 16 plates. Malaya Publishing House, Ltd., Singapore, British Malaya, 1949. Prepared especially for the inaugural meeting of the Indo-Pacific Fisheries Council, this book is divided into three parts. Part 1 gives background material leading up to the inaugural meeting of the Council--discusses the Singapore meeting in January 1947, the Baguio meeting in February 1948, and the Buitenzorg meeting in October 1948. Part 2 reports on the fisheries of the Malayan Peninsula and the islands of Singapore and Penang--includes information on the geographic setting of the Malayan fisheries, fauna and flora, the fishing people and their villages, methods of fishing, organization and economics of the industry, and marketing and distribution of the fish and fish products. Part 3 is an appendix containing notes on the fisheries of North Borneo and Sarawak, a glossary of Malayan fish names and fishing terms, and a bibliography of these fisheries.

Menhaden Facts and Fallacies (A Report by Dr. James Nelson Gowanlock to the Mississippi Seafood Commission), 25 p., illus., printed. Mississippi Seafood Commission, Biloxi, Miss., 1949. A report which discusses the known effects of menhaden fishing operations on other fisheries interests, including game fish and commercial fisheries (shrimp, oyster and crab). Contains also a bibilography giving a few of the references covering the subject of menhaden fishing.

"1948 Food Consumption Surveys," Family Food Consumption for Three Seasons in Minneapolis-St. Paul, Minnesota, 1 Week - Winter, Spring and Fall 1948, Preliminary Report No. 9, FE 791, 23 p., processed, 9/30/49. Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, U. S. Department of Agriculture, Washington 25, D. C. This report, showing a 3-season comparison of food consumption by families of selected size and composition in Minneapolis-St. Paul, is the second in a series of four, and includes fishery products. Gives the average quantity and expense for purchased foods used at home per household per week, as well as the percentage of households using the various foods by annual income class. Includes data on fresh and frozen fish and canned salmon.

Notes on the Vitamin A Content of the Liver Oil of the Vaalhaai or Soupfin Shark (GALEORHINUS ZYOPTERUS), Investigational Report No. 10, by J. A. M. Archer, 6 p., printed. Fisheries and Marine Biological Survey Division, Department of Commerce and Industries, Pretoria, South Africa, 1949. Reprint from Commerce & Industry, December 1948. Report discusses the vitamin A content of the liver oil of the vaalhaai or soupfin shark (Galeorhinus zyopterus). The data on which the report is based were collected from January 1944 through June 1947.

O Mar De Angola (Angola's Sea), by Carlos Carneiro, 245 p., printed, in Portuguese. Empresa Grafica de Angola, Luanda, Angola, 1949. Discusses the Angolan fisheries resources. It contains descriptions of the local fisheries and offers comparisons with fishing methods and yields in the world's principal producing areas.

A Preliminary Report on the Vitamin A Content of the Liver Oil of the Stockfish (MERLUCCIUS CAPENSIS) and the Cape Spiny Dogfish (SQUALUS ACUTIPINNIS) from the West Coast (Approximately between Latitudes 33°S. and 29°S.), Investigational Report No. 9, by J. A. M. Archer, 6 p., printed. Fisheries and Marine Biological Survey Division, Department of Commerce and Industries, Pretoria, South Africa, 1949. Reprint from Commerce & Industry, December 1948.

Proceedings of the Gulf and Caribbean Fisheries Institute (Inaugural Session, Miami Beach, August 1948), 71 p., processed. Marine Laboratory, University of Miami, Coral Gables, Florida, July 1949. Lists the cooperating

and participating organizations, the 1948 Program, and gives the papers presented at the Institute. Included among the papers are the following: "The Fisheries of British Guiana," "Some Problems of the Shrimp Industry," "Florida Crawfish Research," "Economics of Production in Puerto Rico," "The Sponge Industry from an Economic Point of View," "Biological Aspects of a Potential Sardine Industry in the Caribbean Area, with a Key to the Species," "The Fisheries of Barbados and Some of Their Problems," and "The Commercial Seaweed Industry."

Proceedings of the Inter-American Conference on Conservation of Renewable Natural Resources, Denver, Colorado, September 7-20, 1948, Publication 3382, International Organization and Conference Series II, American Republics 4, 793 p., printed, $2.25. Office of Public Affairs, Department of State (For sale by Superintendent of Documents, Washington, D. C.), 1949. Contains a complete account of the Conference, including copies of all the speeches and papers given, and provides the most comprehensive body of material available on conservation in the Western Hemisphere. There is only one paper on fisheries, "Initial Steps in the Conservation of Fresh-Water Fisheries in Tropical South America, With Remarks on Fishery Resources in General," by George S. Myers. In addition, fisheries are referred to in only three other papers.

Proposed General Fisheries Council for the Mediterranean (5th Session FAO Conference, November 21, 1949), C49/14, 5 p., processed. Food and Agriculture Organization, Washington, D. C., October 1949. Contains the Draft Agreement of the General Fisheries Council for the Mediterranean and a short summary of its background.

Provisional Agenda for the Fifth Session of the Conference, C49/1, 4 p., processed. Food and Agriculture Organization, Washington, D. C., September 1949. This is the provisional agenda as proposed by the Council of FAO.

A Report to the 31st Legislature of the State of Washington on Food Fisheries of Washington (Submitted by the House and Senate Interim Committee on Fisheries 1947-1948, appointed under the Authority of House Concurrent Resolution No. 11), 59 p., illus., printed. Legislature of the State of Washington, 1949. A survey and report by the Committee on the production and protection of food fish in all waters within and surrounding the State of Washington. Includes the Resolution, survey of southwest Washington and Lower Columbia River area, survey of northern Puget Sound area, survey of eastern Washington and Idaho, recommendations of the Committee, proposed Indian program, Simpson Hatchery Appropriation, and a discussion of the revised code. It also contains a revised fisheries code "for the preservation, protection, perpetuation and management of food fish and shellfish; providing for and creating a Department of Fisheries;....."

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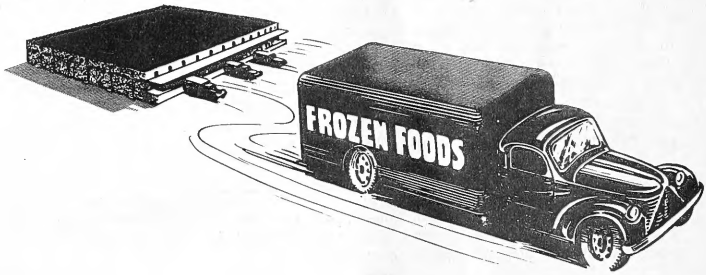
BIBLIOGRAPHY OF THE PRESERVATION OF FISHERY PRODUCTS BY FREEZING

Fishery Leaflet 265, Bibliography of the Preservation of Fishery Products By Freezing, has recently been reissued.

This 87-page bibliography contains references on the freezing of fishery products as far back as 1898 and covers the subject quite thoroughly from about 1920 to December 1947, inclusive. Articles from many journals and books are included. In the majority of cases, the original article was procured. To make the bibliography more valuable, a brief summary of each article is included.



Divided into two parts, Part I covers the period to January 1945 and is a reissue; and Part II covers the period of January 1945 to December 1947, inclusive, and has been issued as a supplement. Those who already have Part I, can obtain only Part II to complete the Leaflet, while others can obtain both parts.

This is the final issue of this bibliography. More recent literature in the field of frozen fishery products is covered in the Service's publication, Commercial Fisheries Abstracts.

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